THE JOURNAL OF THE FLORIDA MEDICAL ASSOCIATION
PUBLISHED MONTHLY
Volume XVIII Jacksonville, Florida, September, 1931 Number 3

SOME OBSERVATIONS ON APPENDICITIS*

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There were 2,176 appendectomies performed by the Orlando Clinic to April 30, 1931. In reviewing these cases, a great many interesting facts were found, especially in the diagnosis: differential diagnoses, operative procedures, complications and causes of mortality. A paper discussing all these would necessarily be too long, so I am confining myself to a few of the most important points, as I see them.

The late John B. Murphy said that if you had a patient who complained of pain (abdominal) followed by nausea or vomiting, tenderness in appendiceal region and temperature, the symptoms coming in that order, you had an acute appendix, of course, ruling out pelvic diseases in women. This is still true, but I wish to go into a little detail regarding the two most important symptoms: pain and tenderness.

Any pain originating over the appendix may be looked upon as not suspicious of appendicitis, unless the reverse can be proven, while a pain beginning all over the abdomen should be regarded as a sign of probable appendicitis, even before it locates in the right lower abdomen. It is the earliest, most constant and the most essential symptom. Ninety-nine times out of a hundred, the pain is general at first, beginning in the epigastrium, the umbilical or rarely left side. Because of its sudden onset, most patients think they have an ordinary colic or "belly-ache", but after a period of time, from six to twenty-four hours, it localizes in the right lower quadrant and persists until the attack ends itself normally or by the incidence of tragic pathology. As the pain continues it may become a steady dull ache, assume an intermittent quality and in very mild attacks subside in an hour or two. It is increased by change of position, jarring of the body, the upright position and pressure of the hands. Turning on the left side is especially apt to increase the suffering. Because of this maneuver, the right colon drops inward, causing great displacement of the appendix and traction at its attachment.

The degree of pain differs notably. It bears no relation to the pathological changes in the appendix but, as a rule, the most intense suffering is seen in the fulminating types showing rapid development of the morbid process. Many times, however, complete sloughing of the appendix is found when the initial pain was light and short-lived. The temperament of the patient will have much to do with the subjective manifestations of the pain. Some will complain bitterly and react excitedly in the presence of slight suffering, while others will endure with complacence the most violent agony. It is useful to take account of this personal equation for one might become alarmed unduly and thrown off the track by the former individual or fail to grasp the situation in the latter.

There is no more delicate matter in the observation of appendiceal patients than the elucidation of the incipient pain and of its relation to other symptoms. More significant than the degree of pain is its duration. There is no rule to follow as guide. In a typical, mild attack, the pain begins to subside after twenty-four hours and is practically gone in forty-eight, unless some untoward and unusual phenomena shows up The tendency is to recovery from the acute attack.

As the pain steadily increases, denoting more and more distension with edema and infiltration of appendiceal walls, either the appendix is removed or ruptures. In the presence of continuing pain it is safe to suppose that the appendix is intact no matter what the duration of the pain. When the pain subsides slowly after rather a short time and with no cessation of other symptoms, gangrene may be suspected; when the duration is longer and the symptoms are declining, recovery from the attack may be predicted. If the pain ceases suddenly, especially after a marked increase in severity, perforation is probable. This is the most serious disaster that can befall the patient and it may be averted by a proper understanding of the significance of the pain. Pain is a pointing of nature, a reliable index that something is

*Read before the Fifty-Eighth Annual Meeting of the Florida Medical Association, Orlando, May 12, 13, 1931.

wrong. If we judge it correctly and follow its lead, a safe issue most likely will follow. Above all it must be remembered that in acute appendicitis, the abrupt relief from pain does not mean necessarily that the patient is better, as very often he is worse. A false sense of security has caused countless fatalities.

The special tenderness associated with acute appendicitis is elicited upon pressure applied directly over the inflamed appendix. It varies in times of appearance, in grades of severity and in relative position. In the early hours of an attack, there is superficial hypersthenia all over the abdomen, corresponding to the diffused pain. Soon this cutaneous tenderness disappears and a marked response to pressure develops in the right lower quadrant. Often this will appear before the pain itself has localized in that region.

It is vitally important to keep in mind the distinction between pain and tenderness: the first *subjective*, unrelated to external influence, and the second *objective*, evoked by pressure and modified by its character and degree. It is still *more important* to realize that the tenderness may be where the pain is not. This is especially significant among the early manifestations where severe pain is commonly located at the epigastrium or around the umbilicus and marked tenderness is produced by pressure in the right iliac region. In most instances such pressure increases the pain at the point where complaint is made serving to produce connection between lesion and symptom. The degree of response to pressure over the tender area is contingent upon the perceptive impulses of the patient, the period of the disease, the depth of the inflamed part from the surface and the method of applying the pressure. The personal psychological reaction enters largely into the matter also. The tenderness gradually becomes intensified from the time of its appearance and at the end of twenty-four hours generally is at its height. Just as the pain may cease suddenly, or gradually in certain events, so the tenderness may fade away quietly or leave suddenly.

As an almost fixed rule, the nearer the inflamed appendix to the parietal peritoneum, the more acute the tenderness. Granting that a deeper seated lesion of greater severity were present, its response to pressure would not be so marked as a lesser lesion nearer the wall. The intensity of response to pressure may be no index whatever to the extent of the lesion. The point at which the tenderness exists in its maximum intensity is a question of great interest and moment. As a universally accepted observation this area corresponds to the base of the appendix, for it is there that the nerve distribution occurs with which the different nerves from the appendix unite to convey their sensations back to the spinal ganglion.

Every surgeon of experience knows that there is a wide variation in the exact spot of greatest tenderness, just as the position of the appendix varies in health and disease. In determining the sensitiveness to pressure, the clinician is more interested in its diagnostic aspects than in its definite anatomical position. First, locate the spot by careful palpation and there the appendix will be found.

Fowler's opinion that it is difficult to estimate the exact diagnostic value of the leucocytosis is at the present time as true as it was in 1900. From our own findings and from the study of the literature, the following conclusions may be summarized: The height of the leucocytosis bears no relationship to the severity of acute appendicitis. The white cell count does not run parallel to the different stages of the pathological process. The practice not to advise operation unless there is a marked increase in the number of leucocytes is dangerous for the patient. By repeated white cell count, very little will be gained in our knowledge about the patient's condition, because spontaneous changes in the number of leucocytes are physiological. Appendectomy must never be undertaken or deferred on the basis of the blood count alone. Leucocytosis is a minor symptom of appendicitis, inconstant and unreliable. A high polynuclear count, however, is indicative of a severe infection.

In glancing over our operations, I was struck by the increased mortality in children and in looking up their series of operations, I find that many writers have reported mortality rates varying from 9.7% to 33% and have noted that the mortality is markedly higher than in adults. In attempting to account for this, many reasons have been advanced, but by subjecting these to a critical analysis, it would seem possible to reduce them to five which are inclusive and fundamental and which we may term mortality factors. They are first, difficulty of diagnosis; second, delayed medical attention; third, the misuse of purgatives; fourth, physical conditions peculiar to children; and fifth, poorly timed and poorly executed operations.

Why is the diagnosis difficult? The reasons most frequently heard are that children are constantly having more or less pain in the abdomen, that they vomit at the least provocation and from a large variety of causes, that acute respiratory infections and acute contagious diseases are often initiated with abdominal symptoms. Children are so hard to examine satisfactorily.

Does the normal child have frequently recurring pains in the abdomen? Certainly not. Such pains call for a determination of the causative factor, whether it be appendicitis, dietetic irregularity, enteritis, respiratory infection, inflammation of extra-abdominal structures or other causes. The fact that children frequently do have pains in the abdomen, with or without vomiting, cannot be used as a cloak behind which we may hide, if we have failed to eliminate appendicitis as a cause.

The difficulty in differentiating an acute respiratory infection from appendicitis is occasionally great. This is a real diagnostic hazard, and frequently necessitates a most careful estimation of the physical and laboratory findings and the history of previous attacks or exposure to respiratory or contagious disease. Failure to obtain a satisfactory examination of the patient is rarely excusable.

Delayed medical attention has a distinct influence upon the mortality rate. This is a difficult factor to control because fundamentally it depends upon the observations and judgment of untrained minds, complicated by social and financial conditions. The business of raising children is usually undertaken by a person who has had no preliminary training whatever, who has no qualifications beyond an intangible maternal instinct, and whose usual source of information consists of a mother or friend who has had a series of perhaps three or four cases upon which to base her advice.

It is hard for the average mother to know when to call the doctor. In many localities the cults have effectively prevented her from obtaining any knowledge of anatomy and physiology in our public schools. If she has been so fortunate as to have gone to college, she probably is not one of the few who have taken a course in home nursing but is one whose only knowledge of the contents of the abdomen has perhaps been gained, when with half averted eyes, she has hastily transferred the entrails of a chicken to the garbage can. If, in addition to possessing this foundation for making a physical examination, she is the watch-dog of the family exchequer and knows the cost of medical services, it is not surprising that she puts Willie to bed with a dose of castor oil, and waits a day or two before calling the doctor. The serious consequences of this delay are too frequently before us to require further comment. The factor of delayed medical attention has a great influence upon the mortality rate and it can be reduced only by persistent education of the laity.

The misuse of purgatives causes a sharp rise in the mortality rate, and while the influence of this factor has frequently been called to our attention, the results which are constantly appearing upon the operating table would seem to warrant further emphasis. Through recent efforts of the American College of Surgeons, movies have been made available for medical groups which show the state of constant intestinal unrest produced by peristalsis in the normal abdomen, and which make it easy to picture the veritable lashing of the intestines which must follow the use of irritant cathartics. The effect of such action upon an inflamed, edematous appendix, about which nature is endeavoring to build a protective isolation of adhesions is all too clear as is almost the rapidity with which a localized peritonitis would be converted to a general one.

The purgative factor in the mortality is due largely to the home conditions already discussed and while the hope of reducing it depends to a great extent upon the education of the laity, a large measure of responsibility is ours to see that we eliminate the possibility of appendicitis before prescribing cathartics.

Physical conditions peculiar to children which are most often cited are: the omentum short, thin and incapable of affording protection; the peritoneum more susceptible to infection than in the adult; the appendix more easily perforated; the child generally not able to stand infection well. Of these the most important is early perforation, a factor difficult to reduce, except perhaps by the persistent education of the laity already mentioned. The bearing of the other conditions upon mortality does not stand close analysis. To be sure, the omentum is short and thin, but not disproportionately so. We certainly would not expect to find an omentum of the adult size and tensile strength in an infant. Its protective ability also is excellent, as can be attested by any one of us who has attempted to separate omental adhesions in an infant or small child. The failures of the omentum to protect can be laid to early per-

foration, because rupture of the peritoneal surface has followed so closely upon peritoneal irritation that there has not been time after the first chemotactic hurry-call for firm adhesions to form.

Is the peritoneum more susceptible to infection? This is hard to believe after repeatedly seeing cases recover as soon as proper drainage and removal of infectious material has given the peritoneum an even chance. Here, again, the instances where peritoneal resistance breaks down are those in which early perforation or delayed medical attention has permitted massive infection to overcome resistance.

Does the child generally stand infection poorly, or in other words, is his resistance usually low? Such a contention is almost absurd. It is well recognized that the resistance of nurslings is so high that they rarely contract contagious disease. The resistance to diphtheria and scarlet fever, as shown by the specific Schick and Dick tests, is greatest in early childhood. In children the reaction to vaccination is usually mild, indicating a certain amount of resistance even to smallpox. Why, then, should we, in the face of the fact that all known specific tests of resistance rate the child high, contend that his resistance is low to pyogenic bacteria and colon bacilli which normally inhabit his skin and alimentary tract and to which he should, therefore, have developed an almost specific resistance? The answer is not a normally low resistance but rather a massive infection from early perforation overcoming a normally high resistance. The mortality factor arising from the physical peculiarities of children resolves itself into the control of early perforation and hence is a most difficult one to reduce.

Another fact we have noticed in going over our cases is that very often a combination of appendicitis, disease of the biliary system and a gastroduodenal ulcer occurs. The majority of surgeons admit the difficulty in a large percentage of cases, to determine, before the operation with the aid of all the diagnostic means, if the stomach and duodenum and the gall-bladder and the appendix as well participate in the clinical picture or which of them is its cause. In many cases, even the operation does not clear the situation in regard to the genesis.

Our attention has furthermore been drawn to the fact that post-operative complaints were often due to the affection of an organ other than that which had been operated on. Thus, many appendectomized patients later suffer with a disease of the biliary or with gastric and duodenal ulcers, and complaints after an operation on the biliary system as the gastroduodenal tract, have often only been finally relieved by a secondary appendectomy. All these very difficult problems can only be approached by inspecting, during an operation upon the abdomen, the stomach, the duodenum and the gall-bladder and if possible, to expose the appendix as well. This is technically possible in almost all the cases in which a median incision or a right rectus incision has been made. The most frequent combination in our experience is cholecystitis and appendicitis; the next gastroduodenal ulcer and appendicitis and the least percentage, gastroduodenal ulcer and gall-bladder and appendicitis.

I believe that the appendicitis was the primary infection in these combined cases, but in cases where the appendix has been removed first, the gall-bladder or gastroduodenal disease has followed. We also believe that certain individuals are predisposed to abdominal disease. The defensive power of the peritoneum varies extensively. There is also a familial predisposition to appendicitis. Members of the same family, who had to be operated on for abdominal disturbances showed the same anatomical peculiarities of the appendix, excessive length, location, kinks, torsions, etc. In the time previous perhaps to 1921, these combined infections were not noted, but since that time with a systematic examination these conditions have been recognized.

The Ochsner treatment has, in many cases, already been adopted before the case comes into the hospital and the time for temporizing has passed. There are so many factors which conspire to cause a fatal termination, that is virulence of the infecting organism, resistive powers of the patient which can not be accurately assayed, that one regards with suspicion so dubious a guide as the supposed danger period between the second and the sixth days. The reality of an especially perilous period, between the loss of the natural immunity and the calling up of the protection conferred by an acquired immunity, is in consonance with the theory of a negative phase, but that this occurs with sufficient certainty between the second and the sixth days, to dictate treatment seems to rest upon too slender a foundation of academic speculation to warrant any deviation from the path outlined by the physical signs. In the race between the rising virulence of the poison and the patient's powers of resistance, the danger

period comes to one case within a few hours, to another it may never come at all. There can never be, in any case capable of spontaneous resolution, any period of absolute loss of immunity, else would the patient surely die. During the period of lowered immunity, a period that varies in onset and duration and degree with every patient, the only sure guide is the clinical picture; it is possible that the operation may still be safe during this period provided certain details of technique are adopted.

Our records show that the mortality in early operation, that is the first twenty-four hours, is practically nil, ½%; that every day's delay increases the mortality rate.

The latest available government statistics show that there were 17,433 deaths from appendicitis in 1928. The rate per 100,000 estimated population is 15.2%. Although an increasing mortality rate according to vital statistics is reported, the operative mortality rate for appendicitis has decreased. The average operative death rate for the years 1902 to 1910 was 7.6%; for years 1910 to 1920 was 5.7%; for years 1920 to 1929 was 3.5%.

Probably one of the chief causes of the still high mortality is the fact that medical treatment is always given when it should be surgical. Indecision and procrastination on part of physician and patient, their failure to realize the seriousness of the condition and to institute radical treatment before the disease reaches the drainage stage are the main causes of mortality.

Early diagnosis followed by immediate appendectomy offers the best hope for the reduction of the mortality rate in acute appendicitis.

To castigate the public with the hope of improving conditions is a negative procedure, in fact it is pharisaical because there still exist surgeons, who permit cases of acute appendicitis "to ride" until a time convenient for operation. Amelioration of mortality figures will occur when surgeons, particularly part-time surgeons, realize that even in the complicated cases recovery is the expected outcome.

In our own personal experience, we have been able to hold the mortality to a very low point. This has been due to several factors, the principal one being that the doctors in this section of Florida make early diagnoses, warning the patients in time. No surgical procedure can take the place of early diagnosis.

It becomes increasingly evident that the reduction in mortality will only be effected by greater precision in diagnosis, earlier operation, a more lively appreciation of the serious nature of the disease and by a standardization of technique, especially by the abandonment of those obsolete methods of approach which give too limited an exposure or scope.

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DISCUSSION

Dr. F. J. Waas, Jacksonville:

This is a very timely paper, especially now that we are elaborating so much on the mortality of appendicitis.

The mortality from appendicitis is still increasing. In Philadelphia between 1913 and 1923 the mortality increased 18%. Out of the first year's check-up it was found that 207 deaths were due practically to purgatives. Seventeen thousand cases died in 1929 in the United States, and of these 12,000 had purgatives, and 11,000 of these probably died as a result of purgatives. Procrastination and purgatives are two of the greatest dangers we have in combatting the mortality of appendicitis. I am quoting from Dr. Hubert Royster in the Journal of the Southern Medical Association. Royster states that "the attack is the knock at the door." In other words I feel that the pain is the knock at the door.

In a recent study made by Dr. Jeff Miller of 239 deaths from appendicitis collected from the records of the Charity Hospital and Touro Infirmary at New Orleans, more than 42% of the deaths had purgatives. A contributory fact in connection with these figures is that many more patients; 17% more, to be exact, had treated themselves in this fashion in preference to calling the doctor, and a second astounding fact is that in 12.6% of these cases the purgative was taken on the advice of a medical attendant. The physician must know, even if the lay person does not, that

abdominal pain can be the precursor of many serious surgical diseases, and that it is most often the precursor of acute appendicitis in which purgation is akin to suicide. Castor oil especially and purgatives in general should never be given in the presence of abdominal pain. A good slogan for druggists to adopt or post in a conspicuous place in their pharmacy would be "never give purgatives in the presence of abdominal pain. See your doctor first."

The pathological appendicular syndrome of pain, nausea, vomiting, temperature, tenderness and abdominal rigidity should be changed to nausea, vomiting, then pain, and if this pain is not relieved by vomiting or emesis, in other words, if it is aggravated by vomiting, you can assure yourself that you have a beginning peritonitis, or in inflammation of some abdominal viscus. The pain, to my mind, is the result of the insidious pathology that may have been existing for twelve or even twenty-four hours before pain manifests itself. Dr. Royster definitely states that "pain is the attack and the attack is the knock at the door." It is nature's warning to get busy.

Relative to the blood count, in children it is especially confusing. We frequently find a ruptured gangrenous appendix in a child with a very low blood count. It is undoubtedly due to a depression of the myleocytic response. I believe in many instances this myleocytic depression will hold good in adults, so do not attach all the importance to the blood count, especially if you are expecting a typical leucocytosis.

Dr. John S. McEwan, Orlando (concluding):

I wish to thank Dr. Waas for his discussion. In a short paper like this, it would be impossible for me to discuss the complications, differential diagnosis, treatment, etc. It is a great satisfaction to us surgeons to know that, although the mortality rate is increasing, our operative mortality rate is decreasing.

There are three things that are increasing our mortality rate: purgatives, which are prescribed by druggists for "pain in the belly"; the increasing number of quacks in Florida; and the fact that many doctors have, perhaps, too great a tendency to let their patients "ride for awhile," if they are busy, and this delay is always expensive.

In this section of Florida we have a group of physicians who make an early diagnosis and believe in early operation.

HEAD INJURIES*

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Jacksonville.

Skulls dating from the Neolithic age of about 12,000 years ago have been found that have been trephined. The controversy concerning the treatment of fractured skulls has occupied probably most of that period of time and will continue until some semblance of order comes from the disorder and misunderstanding that surrounds the subject. To speak of fractured skulls when we mean injuries to the skull, the meninges, or the brain is merely an example of the confusion that attends the whole group of head injuries.

The treatment of this condition has heretofore been aimless and haphazard without the guiding star of sound physiological and pathological knowledge. However, of late there are emerging slowly certain facts and procedures which commend themselves to us and sooner or later must be accepted by those desiring the best for their patients.

First: A knowledge of the circulation of the cerebrospinal fluid and the mechanism of increased intracranial pressure is absolutely essential and is the foundation upon which all treatment is based. The cerebrospinal fluid, as far as we know, is an active secretion of the choroid plexus mainly, and the metabolic products of the brain cells themselves through their perivascular channels.

There is a definite circulation from its origin in the lateral ventricles through the foramen Monroe to the third ventricle, then through the aqueduct of Sylvius to the fourth ventricle, where it escapes through the foramina of Magende and Luschka to the subarachnoid spaces beneath the tentorium and the large cisterna at the base of the brain.

From the cisterna, the fluid follows two paths mainly. The larger part rises over the surface of the brain through the incisura tentorii and is absorbed chiefly into the large venous sinuses by means of the pacchionian bodies. The smaller portion descends along the ventral aspect of the cord and returns along the dorsal aspect. These two streams are partly separated by the ligamenta denticulata and the spinal nerves.

Thus, the main path of the cerebrospinal fluid is from the ventricles within to the cisterna at the base, thence through the cleft in the tentorium

*Read before the Fifty-Eighth Annual Meeting of the Florida Medical Association, Orlando, May 12, 13, 1931.

outward over the surface of the brain into the subarachnoid spaces. The cause of this flow is the force excited by the secretion in the plexuses aided by gravity and pulsation in the brain and a lower pressure in the dural sinuses than in the subarachnoid spaces.

The normal circulation of the cerebrospinal fluid may be disturbed by a number of factors but here we are concerned only with those caused by acute injuries. Ninety to ninety-five per cent of all severe head injuries, with or without fracture, sustain damage to the brain itself or to its coverings. This injury may vary from mere contusion of the contents, rupture of small vessels in the meninges, or brain substance, and minute hemorrhages here and there, to massive extravasation of blood and laceration.

The mechanism of increased intracranial pressure or traumatic edema begins at the time of the injury. There is first a disturbance of the vessels, then retardation of the current, followed by extravasation of their contents. This is aided by whatever hemorrhage may be present either outside or underneath the meninges. Cells deprived of oxygen absorb fluid, causing them to swell. The outer coverings of the brain being unyielding the subarachnoid space is the first to suffer. This being the main channel for the normal escape of cerebrospinal fluid on its way to absorption, its loss causes a damming back or pooling in the large cisterna at the brain base, below the tentorium. The cerebrospinal fluid continues to be secreted in the ventricles and pools in the cisterna forcing the medulla upward. This tends to occlude the narrow subarachnoid spaces in the incisura tentorii and further stasis occurs. The stasis or anemia in the brain calls upon the centers in the medulla, the blood pressure rises sufficiently to force blood through the cerebral vessels again. This in turn causes an increase in the condition of stasis already existing in the brain. Again, there is a corresponding rise in blood pressure. This continues until the medullary centers are exhausted and a condition of medullary exhaustion supervenes and the patient passes away.

This cycle must be broken at a point below the tentorium early enough to prevent death or even should death not occur and the pressure be allowed to remain, degenerative changes take place in the cortical cells with a resultant gliosis.

This also explains why many patients pass away even following a large well-performed craniotomy for the relief of pressure. Upon opening the dura and arachnoid there is a sudden gush of fluid. The brain seeking relief from the pressure within is gradually rolled outward, until it fits snugly against the edges of the bony opening. The subarachnoid space is again closed and favorable conditions for the increase of pressure are again present.

Second: We must realize that patients do not die of fractures of the skull. They may expire from shock, hemorrhage, increased intracranial pressure or infection but not from fracture. Therefore, unless depression or compound fracture occurs it may be almost disregarded and our attention directed entirely to the brain injury. With this knowledge, we may proceed now to the consideration of the main points in the treatment.

A patient presents with an acute cranio-cerebral injury. He should be seen immediately by the physician in charge and a thorough examination made of the entire body as concomitant injuries must not be overlooked. If shock is present, proper treatment is instituted as, ordinarily speaking, a patient that will die within six hours will die regardless of what is done.

Valuable time should not be lost in the installation of proper remedial measures while waiting for an X-ray or the reading of an X-ray film. It is better, when possible, to use a portable X-ray and take the films in bed thus avoiding additional injury from transportation to and from the X-ray department. Under no circumstances should such a patient be allowed to lie on a roller or table waiting for his turn for *any* laboratory procedure. Surgery should be done only when indicated definitely as unnecessary decompressions through added trauma to the brain substance or unchecked oozing of blood may be the deciding factor against recovery.

The indications for operation are:

1. Severe depression or depression with focal symptoms. Surgeons generally have elevated all depressed fractures. However, as early as 1811, Abernathy, and later others, doubted this necessity. Of late, Naffziger and Glazer have shown experimentally in rabbits that the harm is not done by the depression in the bone but by the force producing the injury. Therefore, slight depressions without symptoms, unless over the motor or sensory area, should be left alone. All others should be operated at once.

2. Compound fractures. These should be cleaned, debridement performed and closed with a small rubber dam drain.

3. Massive hemorrhage usually middle meningeal (5%) should be operated when diagnosed and

suspected by slowing of pulse, rising blood pressure, fixation of pupil, gradual hemiplegia or convulsive attacks beginning in the face and extending to the leg and arm in the order named, bilateral rigidity, paraplegias, etc. Small hemorrhages with focal signs usually occur immediately underneath the point of injury or directly opposite by contra coup. These may be allowed a few hours' leeway as a decompression from increasing pressure may become necessary later and then both results accomplished at the same time.

4. Increasing intracranial pressure in spite of treatment. This will be manifest by a rising temperature and pulse and increasing restlessness or deepening coma and choking of the disks, or irregularity of the pulse and respiratory rate. Adson has recently noted another significant sign and that is the approach or crossing of the pulse pressure and rate. Spinal punctures and the dehydrating measures should continue as before. When seen late and medullary compression is present, the only possible chance for life is the performance of cisterna magna puncture with patient in the Trendelenburg position followed by suboccipital decompression.

Morphin should not be given except early in shock with rapid pulse and low temperature, or after decompression. Certainly it has no place in the treatment previous to decompression as it is given usually for restlessness, a sign of cerebral irritation, and not for pain. Cerebral irritation manifest by increasing restlessness as brought out by Dandy means the patient is either coming out or is going deeper into coma, in other words, a break in the compensation that nature provides for certain degrees of increased intracranial pressure. If the latter is occurring, nature is trying to tell you that something further must be done in the very near future or disaster in the form of medullary exhaustion is at hand.

It is well for each individual to work out the plan of procedure which best suits his own needs. Ours is as follows:

1. Examination and X-ray.

2. Spinal puncture immediately with a thorough drainage. A manometer may be used for this purpose and the pressure reduced one-half as recommended by Jackson, Fay and others. This is not essential at all and to decide for or against a decompression by a few points up or down a manometer gauge is rather hazardous. There is nothing more definite than observation of the patient himself.

The repetition of spinal punctures should be judged by the amount of blood in the spinal fluid, the rapidity of its diminution and the progress of the patient. Fay has recently shown that blood in the subarachnoid spaces temporarily and permanently damages the subarachnoid villi and the pacchionian bodies, the chief disposers of cerebrospinal fluid, causing pooling of the fluid, brain ischemia and later chronic external hydrocephalus and cerebral atrophy. Therefore, the blood is removed as rapidly as possible. Spinal puncture is used also post-operatively as brought out earlier in this paper.

3. Temperature, pulse and respiration are taken every fifteen minutes and any change is reported immediately.

4. Magnesium sulphate, one-half ounce, in one ounce water is given by mouth and repeated every four hours for twelve doses thereafter. If the patient is unconscious, this is given by rectal injections.

Occasionally, a rising pulse during this treatment may be controlled by glucose by vein as this replaces from the tissues the vascular fluid volume depleted by the magnesium sulphate. This should be given from the ampoules containing 50% solution and not in 500 to 1000 cc. of 5% of 10% as in this manner too much fluid is given and occasionally is followed by a very disturbing reaction. Not more than 300 cc. of fluid should be allowed each twenty-four hours and later the dehydration may be aided by substitution of sweetened or glucose drinks.

Antitetanic serum should not be given for several days or until possibility of operation is passed.

All such patients, according to the severity of the injury, should be kept in bed from thirty to ninety days without alcoholics or tobacco, restricted mental activity and not more than a 750 cc. fluid intake daily. In the more severe types, physical and mental activity should be limited for six to twelve months and the fluid intake should always be kept at a minimum—750 to 2000 cc. per day.

Even the slightest injury and change in character or mental condition, such as loss of memory or initiative, indifference, weakness, headaches or convulsive attacks, should call for a thorough study and ventriculography as many with conditions such as accumulation of blood or cerebrospinal fluid or air can be relieved by later operations.

It is only by a thorough understanding of what

is to be accomplished, prompt and conscientious treatment that we can lessen the mortality and morbidity of acute head injuries.

DISCUSSION

Dr. V. A. Lockwood, St. Augustine:

Dr. Van Schaick has given us such a comprehensive outline for treating fractures of the skull in so few words that it is difficult to add to his paper.

I am pleased that he has impressed upon us the necessity for a thorough examination for concurrent injuries. Recently two cases of head injury have come to my attention, one of which was a ruptured urethra and the other a ruptured bladder. Both of these injuries to the urinary tract needed more immediate attention than did the skull fracture. These injuries were diagnosed when an attempt at catheterization was made. Many patients who have sustained head injuries in automobile wrecks or any serious traumatism from other causes have ruptured bladders or abdominal viscera and if the patient is unconscious we are apt to overlook these concurrent injuries. Therefore, I believe that these patients should be routinely catheterized as soon as the patient has recovered from shock.

Dr. Van Schaick has given us a very conservative expression of the operative indications in depressed fractures. I agree with him that many of the slighter degrees of depressed fractures do not require elevation. This is particularly true if the depressions occur over the so-called silent areas of the brain. For example, we have seen persons who have sustained rather serious depressions in the frontal area who have never been operated upon and yet have recovered without any serious impairment. Therefore, I think we can very often dispense with the elevation of depressed fractures in these areas. However, when we have a depression overlying the motor area I believe that the fracture should be elevated as a subsequent paralysis or epilepsy may result.

I was glad to hear Dr. Van Schaick advocate spinal puncture as an adjunct in the treatment of fracture of the skull as this view differed from the opinions expressed yesterday at the meeting of the Association of Railway Surgeons. I do not believe that spinal punctures are necessary in those cases that show no manifestations of increased intracranial pressure. If the intracranial pressure is rising I believe that an attempt should be made to lower it with repeated spinal punctures cautiously performed and with the various dehydration measures such as the use of magnesium sulphate per rectum and the intravenous injection of a hypertonic solution of sodium chloride administered with extreme slowness.

It seems to me that a number of communities in Florida cannot command the services of a neurological surgeon. Under these conditions our patients often stand a better chance if we will try these conservative measures before resorting to decompression operations which are best performed by those skilled in this particular field.

OCULAR DISTURBANCE IN PREGNANCY AND DURING THE PUERPERIUM*

NELSON M. BLACK, M.D.,
Miami.

During pregnancy numerous changes are manifest in the eyes and their adnexa that are normal to the state and disappear with its termination. Not infrequently, however, disturbances of vision arise in the course of gestation and during the puerperium which are danger signals of the greatest importance. These visual disturbances may be the first indication of the gravest danger to the life of the woman, or the first symptoms of morbidity of the various ocular structures which may terminate in diminished vision or even blindness.

All the elements necessary for the growth of the foetus and for the promotion of its metabolic activity are derived from the maternal body, which also must take care of the waste products arising from the increasing cell activity. While the pregnant state is a physiologic condition, there is, nevertheless, an enormous demand on the reserve material of the maternal body. In addition, there is the mechanical interference with bodily functions due to pressure disturbance.

The increased demand on the reserve material of the pregnant woman is bound, under all circumstances, to diminish the resistance of the body to all injurious influences, autogenous or exogenous. Thus, in any organ of the body in which there exists some abnormality, or in which there is present, at the time of conception, some morbid process, the chances for pathologic changes to take place or to increase are greatly enhanced by the generally lowered bodily resistance. Further, the general lowered resistance cannot successfully

*Read before Staff meeting of St. Francis Hospital, Miami Beach, March, 1931.

combat the malign effects of a focus or foci of infection that may be active in the body; these, indeed, may be the exciting factors in lighting up morbid processes in any organ, the eye not excepted.

The early recognition of ocular disturbances during gestation is of great importance, as they frequently are danger signals of marked systemic changes that menace not only the eyesight of the woman, but possibly her life.

Increased deposit of pigment in the rete mucosum of the lids, as well as in other parts of the body, is frequently noticed. These chloasmata uterina consequent on the destruction of a large number of red blood corpuscles usually disappear after delivery, depending on the depth and extent of the pigmentation. In patients with marked chloasmata, examination of the blood is indicated as well as determination as to whether activity of the kidneys is diminished.

Any previously existing weakness of the intrinsic and extrinsic ocular muscles may be aggravated, especially if the general physical condition has become below par as the result of nausea and vomiting.

Polyopia may develop in the early months, and is usually one of the manifestations of an hysterical condition. Yet hysteria should be the last condition thought of in any case of pregnancy.

External and internal squint is occasionally present, especially in those with unstable muscle balance, and is most difficult to relieve, owing to the irregularity of the manifestations of the strabismus.

Occasionally, the secretion of tears is increased from the third month on to term, and is quite annoying. This is frequently accompanied by increased secretion from the salivary glands. Usually, in these cases, the lacrimal and salivary glands are swollen.

Subconjunctival hemorrhages occasionally occur. If frequent and large in amount they indicate some cardiovascular change, and should be regarded as a danger signal. They may be early signs of a grave toxemia.

The phlyctenular inflammations of cornea and conjunctiva which occasionally occur during pregnancy are not peculiar to the condition and will not be dwelt on. Ulcers of the cornea are not frequent in pregnancy, but develop from the usual causes, i. e., injury and infection. Softening of the cornea, keratomalacia, occasionally develops in subjects very much enfeebled by pernicious vomiting and dyscrasias. Conical cornea is said to have developed in pregnancy, and to have its origin during the stress of delivery.

As a result of reflex disturbance through the sympathetic nervous system, miosis or mydriasis may be in evidence. Cycloplegia may appear during the latter half of pregnancy, the result of insufficient enervation of accommodation, and is most annoying.

Intercurrent iritis or cyclitis is dependent on preexisting causes, systemic infections or toxemias generated by the pregnant state.

The formation of cataract has always been considered as due to preexisting disease.

Vitreous hemorrhages occur frequently, causing great alarm. As a rule, however, there is complete absorption with no loss of vision.

Bitemporal contraction of the visual fields with enlargement of the blind spot of Mariotte has been observed in pregnant women by various writers for many years. The consensus of opinion formerly was that these symptoms in individuals with otherwise normal eyes were the result of a normal physiologic hypertrophy of the pituitary gland in the pregnant woman, producing compression of the chiasm which manifests itself by changes in the visual fields. The changes vary in degree and amount according to the degree of compression suffered which depends upon the amount of hypertrophy and on the anatomic peculiarities of the individual skull, which might favor or hinder compression.

Dr. Juanita P. Johns' conclusions, after very thorough examinations of 29 young women who presented initially the usual evidences of normal uncomplicated pregnancy are as follows:

"(1) The investigation showed definite concentric contraction of form and color fields in the majority of the cases.

"(2) The blind spot showed enlargement in the majority of the cases.

"(3) Enlargement of the blind spot and concentric contraction of the form and color fields are consistent with a general reduction of retinal vitality, in that the parts of the field involved in the contraction are those having a minimum retinal sensitivity. The endocrine studies show a lowered vitality through the pregnant state, tending to return to normal post partum. This parallels the visual field studies in this series of cases.

"(4) These visual field studies do not show the characteristics of pathology of the pituitary gland associated with enlargement great enough to cause pressure, such as bitemporal hemianopsia, superior temporal cutting, scotomata in the cecocen-

tral of paracentral area, or interlacing of color fields. These measurements are apparently not of sufficient magnitude to have arisen from either pressure or contact.

"(5) On the basis of the visual fields, the radiographic measurements, and the investigations of vital function, it seems warrantable to conclude that the field changes in pregnancy probably depend upon functional modification rather than upon enlargement or vascular changes in the pituitary gland. Whether these field changes are to be regarded as physiological or pathological is a question, only to be decided by further study."

RETINITIS AND NEPHRITIS

The neuro-retinal disturbances liable to complicate pregnancy are classified by Woods as: "(1) The sudden amaurosis usually called uremic; (2) The retinal changes spoken of as albuminuric retinitis of pregnancy; (3) Loss of vision in some parts of the visual field without retinal lesion, sometimes with pallor of the disk, and (4) Neuroretinitis not resembling that called albuminuric.

"It is now accepted that the eclampsia of pregnancy is not uremic in origin but is allied to pernicious vomiting which is caused by the circulation of toxic substances in the blood." So the amaurosis of eclampsia is believed to be due to a sudden toxic saturation of the optic nerve and retina, retinal changes being absent because of insufficient time for them to develop. This view is supported by the fact that optic atrophy sometimes follows uremic amaurosis.

The term albuminuric retinitis of pregnancy has been superceded by retinitis of pregnancy. "So far as they occur together, retinitis of pregnancy and albuminuria may be disassociated, for it is a patent fact that either may and frequently does exist without the other. Therefore, an albumin-free urine need not rule out a diagnosis of toxic retinitis in a pregnant woman."

Retinitis of pregnancy is a rare occurrence, being found, according to Silex, but once in from 3,000 to 4,000 pregnancies; while albuminuria during gestation is not uncommon, varying from 2 to 20 per cent. (And retinitis is found in albuminuria once in forty-five cases).

The retinal disturbance is not considered to be a form of albuminuric retinitis although the true retinitis may develop during pregnancy from a preexisting chronic nephritis; nor is the nephritis of pregnancy a true inflammation. Both the retinitis and nephritis are undoubtedly dependent on the same cause, a toxemia. What the nature of this poison is has not been fully settled, but progress has been made. At least a name has been attached to the toxins, viz., synctiotoxins. Formerly these were thought to be the products of the disintegration of the syncytial cells. Below this is Langerhan's layer, composed of low cuboidal cells; the function of this layer is not understood. Later in pregnancy the Langerhan's layer entirely disappears, but the syncytium does not degenerate nor break up, but is present in the placenta at term.

The present theory, brought out about two years ago, is that the foetus always develops these toxins, but under ordinary conditions they are held back by the syncytium and consequently do not reach the maternal circulation. Occasionally, for some unexplained reason, the syncytium becomes permeable for these toxins allowing absorption, with the resulting toxemia. The origin and function of these cells are physiologic; and when their purpose is served, their death is likewise. One might say the formation of toxins in one's body is a physiologic process. It is not the formation, but the failure of proper elimination of toxins, which acts deleteriously on the economy.

The ophthalmoscopic signs of the retinitis may not differ from those associated with other forms of nephritis. In general terms, there is a widespread neuroretinitis with exudate and hemorhage. The retinitis is toxic rather than vascular in origin, although gross endarteritis with obliteration in the choroidal vessels and in the posterior ciliary as well as the retinal vessels has been found. The findings in the majority of cases have been such as to allow us reasonably to suppose that the vascular changes that take place in pregnancy and in the nephritis of pregnancy are of a temporary nature. Perhaps in half of the eclamptic cases, the patients complain of disturbances of vision, but decidedly few will show evidences of retinitis, and among these the star figures are rarely found.

In the retinitis of pregnancy, the prognosis, so far as it concerns the vision and the life of the patient, depends on the duration of the gestation. If the visual disturbances occur during the first six months, usually the pregnancy should be terminated if the sight is to be saved. Also, it must be borne in mind that any serious eye lesions may be made worse by a subsequent pregnancy.

Chronic nephritis and the retinitis caused by it form sufficient indications for the termination of the pregnancy, as the patient may recover from the nephritis, or at least be greatly improved. The induction of labor, therefore, has been recom-

mended as a therapeutic measure, because with the termination of pregnancy the inflammatory deposits in the retina may be absorbed and good vision be restored, provided the process has not continued so long that secondary changes have taken place.

In general, it may be said that retinal hemorrhages usually indicate a grave toxemia.

If, when the hemorrhages are over the macula, and the optic nerve is involved, the symptoms are not heeded, during which time the toxemia becomes increased, a permanent impairment of vision is inevitable. The life, future health and vision of the woman are, therefore, best safeguarded by an interruption of the pregnancy. Usually, the vision improves rapidly after delivery, and the exudation and hemorrhages become absorbed to a large extent, although in extensive effusions a certain amount of permanent impairment of vision is usual.

The prognosis as regards sight in these cases is probably not so good as is commonly thought, though as regards life it is much better than in the nephritis of the nonpregnant. *Sight, however, never improves until the pregnancy is terminated.* Without the induction of labor, the prognosis is most serious. Cases which go on to term show the greatest proportion (16 per cent) of deaths, and the greatest damage to sight. Spontaneous premature delivery shows 11 per cent of deaths, while after the artificial delivery, the mortality is but 4 per cent.

Silex found a return to normal vision in only three cases out of thirty-five. Therefore, only moderate vision can be anticipated if labor is induced at the seventh or eighth month of pregnancy. Accordingly, in the last two months, ocular symptoms are to be weighed with other findings. Usually, partial optic nerve atrophy is present with white or pigmented spots at the macula. Fortunately, recovery follows in the majority of cases in which visual disturbances have not come on until the last two or three weeks.

A true optic neuritis is not infrequently found associated with the toxemia of pregnancy. In such instances, the relations of the optic nerves to the pituitary body must not be overlooked, and because that structure is so frequently affected in the course of pregnancy, it should be borne in mind that pressure on the nerve may arrive from swelling of the hypophysis.

DETACHMENT OF RETINA

Detachment of the retina is one of the unusual ocular complications of pregnancy and of the puerperium, arising from the strain of prolonged and difficult labor; it occurs more frequently in the course of retinitis of the pregnant than in the retinitis of the nonpregnant woman. In certain of the cases reported, myopia had already existed, a condition that should always be considered as well as the effects of the puerperium, because stress in the susceptible can be sufficient to cause detachment. Bilateral detachment of the retina has occurred, but in practically every case the membrances became reattached, although retinal atrophy supervened.

From the cases reported, the chances of recovery of perfect vision after detachment of the retina during pregnancy, labor or in the puerperium seem to be better than in the nonpuerperal state. The induction of labor, therefore, may favor the reattachment.

EMBOLISM OF RETINAL ARTERY

It is well known that distinct modification of the cardiovascular system occurs during pregnancy, and that the constituents of the blood are changed, comprising an initial reduction followed by increase in amount of fibrous elements; and it is marked by variations in the blood pressure during the last three months. Numerous cases of what has been considered to be embolism of the central artery have been reported, for which affection no other cause than the general blood changes could be assigned. Merely a branch, as the superior temporal, may become affected so that only the portions above the macula become ischemic with the consequent defects in the lower portions of the field and a reduction of the general visual acuity. The value of the cilioretinal vessels in supplying the ischemic area is here fully shown. Occasionally, the vision may be largely regained owing to the restoration of the lumen of the vessels involved.

OBSERVATIONS AT CHRISTIANIA CLINIC

In the Christiania Clinic, eye examinations were made by Schiotz on all pregnant patients with subjective eye disturbances, on those with pregnant toxicosis and on most patients who showed more than ordinary confinement albumin. During five years 680 patients were examined; 158 cases of eclampsia occurred during that time. Among his patients with no albumin and no symptoms of intoxication were found two cases of hemorrhage into the vitreous, one of embolism of a branch of the central artery, one of recrudescence of old chorioretinitis, one of keratitis superficialis, one of keratitis disciformis, two of retinal detachment

in excessive myopia, three with old fundus changes, one of transitory myopia during pregnancy, and two of retrobulbar neuritis in hyperemesis gravidarum. Forty cases of pregnancy retinitis were observed; of these, ten patients had chronic nephritis before, and after pregnancy; seventeen were healthy before, but showed nephritis after the pregnancy; six were free of symptoms before and after pregnancy, and in seven, the follow-up examination was missing, or the retinitis was not healed at the time of the report. Retinitis was found sixteen times in primiparas, and twenty-four in multiparas. The retinitis usually began in the second half of the pregnancy. Of the forty patients, fourteen had, in follow-up examinations, normal vision; all others, with the exception of one who was totally blind, had vision sufficient for work and for reading. The good vision is due to the active treatment, especially to the induction of labor. Most patients had nephritic symptoms before the pregnancy, while some seemed to have developed a chronic nephritis in consequence of the pregnancy kidney. In six cases, a pure pregnancy kidney seemed to have existed, the patients having no symptoms before or after the pregnancy; four of these patients subsequently became pregnant again.

EYE SYMPTOMS WITH ECLAMPSIA

Of the 132 patients with eclampsia, and twenty-six with threatening eclampsia, twenty-seven showed retinitis or papilloretinitis, four, complicated with detachment; one showed hemorrhagic retinitis, and three, detachment without retinitis; in two patients papillitis, in two edema of the retina, and in three chromatopsia was noticed. In all, 33 per cent of the patients showed eye symptoms. During follow-up examination of twenty eclamptic patients, all were found perfectly well, free of albumin and with normal blood pressure. This contrasts greatly with the pregnancy retinitis cases; thirteen of these patients subsequently became pregnant.

FOCAL INFECTION

Since foci of infection in the paranasal sinuses, teeth and tonsils are considered to be such active factors in the etiology of ocular disorders in apparently healthy persons, it is only reasonable to suppose that they would be increasingly dangerous as etiologic factors in the condition of lowered bodily resistance such as that induced by pregnancy.

Four cases of neuroretinitis of pregnancy with marked albuminuria and marked reduction of vision have come under my observation. In each case, extremely active infectious processes in the teeth and tonsils were found. Unfortunately the damage to the eyes had already occurred, but improvement in the ocular condition, which in two cases was marked, and in the other two slight, did not take place until treatment was directed to the infected teeth and tonsils.

Would it not be wise, therefore, during gestation, in addition to the early frequent examinations of urine which is practically always done, also to search for possible foci of infection, especially in the teeth, paranasal sinuses and tonsils, and correct, if possible, morbid processes when found, rather than to run the risk of allowing the patient to proceed to term with the possibility of having to terminate the pregnancy in order to save life or preserve vision?

It is also suggested that visual examination should be made, as a routine procedure, during the latter months of pregnancy, with especial regard to the fundus and visual fields.

UNUSUAL ULCERATIVE CONDITION OF THE CHEST WALL. DIAGNOSIS: TUBERCULOUS GUMMAS*

(A Clinical case with lantern slides)

J. LEE KIRBY-SMITH, M.D., Sc.D.,
Jacksonville.

This paper is a report of unusual subdermal abscesses of the chest wall, of an apparently healthy individual, extending over a period of two years, in which a clinical diagnosis of tuberculosis cutis is made. From the facts of the case as obtained from repeated examinations, the diseased processes are primary, and not secondary to any lung pathology. Accordingly, the writer presents an unusual case of erythema induratum-tuberculosis indurativa, i. e., tuberculous gummas.

Patient Garcia, referred by Dr. J. K. Norwood of Jacksonville for diagnosis and treatment, June 2, 1930, gave the following history: Male, age 32, native of Cuba and cigar-maker by trade, he came to this country at the age of sixteen. His family history gives nothing of value. He had the usual childhood diseases, including diphtheria and scarlet fever. No history of venereal disease. At three years of age he had a perineal fistula which was cured by an operation. The only disabling sickness that could be elicited was articular rheumatism of four months' duration which occurred nine years ago, and since that time the patient has pursued his occupation without loss

*Read before the Fifty-Eighth Annual Meeting of the Florida Medical Association, Orlando, May 12, 13, 1931.

of one day on account of illness. The patient has been married seven years. There are no children.

The history of the present illness began two years ago. A subdermal abscess developed in the chest wall below the left nipple. This was drained and later excised by Dr. Norwood. Cultures from the pus showed staphylococcus aureus present. Other abscesses formed from time to time that were drained and underwent slow healing processes, but were for the most part active. Autogenous vaccines were made and used along with injections of manganese butyrate with no results. A complete physical examination and X-ray study of the chest wall (Drs. Cunningham and Shaw) showed nothing of importance.

On the first examination of the case the patient had a number of subdermal abscesses with sinuses, discharging odorous, thick, greenish pus; one or two scars of previous lesions, one of which had been excised six months before. There had been eighteen lesions in all. The following is a detailed account of various laboratory procedures undertaken to obtain a diagnosis, and therapeutical measures for treatment of the disease.

A tentative clinical diagnosis of syphilis was made, this in spite of three negative serological tests taken during the preceding six months. However, after three provocative tests, June 2d, 6th and 10th, using 0.6 gram neoarsphenamine with no noticeable improvement, syphilis as a diagnosis for the time being was omitted from consideration. This opinion at a later date was further emphasized by intensive treatment with large doses of iodide of potash, and additionally a series of intramuscular injections of bismuth salicylate, with no noticeable improvement in the character and occurrence of active lesions.

Next in order was a consideration of possible mycotic fungi infection; actinomycosis or sporotrichosis, etc. An effort was made on several occasions to get a growth on different culture media by ordinary methods and one suggested by Ashford of using the expressed serum from a fresh biopsy. This was done by Dr. C. E. Royce, pathologist, St. Vincent's Hospital, Jacksonville. Cultures and smears were taken for Dr. Paul Eaton, director of the Florida State Board of Health Laboratory, June 2, 1930; cultures on usual media and on Sabauraud media for mycotic fungi. Both of these laboratories reported no growth. In addition to culturing, repeated examinations of fresh pus smears failed to show any mycelia or spores of fungi. Dr. Eaton reported no bacteria from fresh pus, on four separate slides using various staining methods.

June 2, 1930. X-ray and potassium iodide treatment instituted. Within two weeks' time improvement noted.

Illustration No. 1. Photograph June, 1930, showing location of lesions.

June 23. Von Pirquet tuberculin test on one arm. In twenty-four hours beginning erythema. Same tests on the other arm. A week later there was a marked reaction. (One still present on Aug. 29, 1930). Today, May 11, 1931, there is a raised erythematous papule at the site of the innoculation.

July 15. Complete X-ray study of chest and chest wall reported negative. (Same had been done eight months previous).

July 18. Biopsy of active lesion, and cultured again on Sabauraud media for Dr. Royce. All reported negative. Dr. Royce's report on biopsy was very incomplete. No details as to pathology given. (Report received Sept. 3). Two skin units of X-ray filtered (MacKee formula), one-third dose to each sinus once a week for six treatments.

Aug. 29. All old lesions apparently well except one. On this day two new foci opened, and drained purulent pus. These lesions in the open, three inches below the nipple (right), had been coming on for two weeks as inflamed, indurated

areas having the appearance of subcutaneous abscesses.

Sept. and Oct. Chest wall treated with air-cooled ultraviolet ray. Two new abscesses formed. Old ones gradually healed up.

Nov. and Dec. Intramuscular injection of bismuth at five-day intervals. Discontinued iodide of potash. Since Dec. 15, one new abscess formed, opened and drained.

Jan. 5, 1931. There were three slightly active foci discharging very slightly. On removal of scabs there was apparent a small crater formed sinus. Very slight discharge. The general health of the patient good. Serological reactions negative.

Jan. 10. Biopsy of new lesion and pus smears sent to Dr. D. L. Satenstein, dermatopathologist for the department of dermatology, New York Post-Graduate Hospital. Bismuth, ultraviolet ray.

Jan. 20. Kahn test negative. Four pus smears for State Board of Health. Opened two new abscesses. Ordered potassium iodide after four weeks' intermission. Note: When taking KI shows improvement. Ultraviolet ray.

March 18. Urinalysis negative. Complete blood study by Dr. Kirk, Jacksonville, negative. Kahn tests, (two) negative, making eight tests. Third Roentgen study by Dr. Cunningham, negative. The patient had new abscesses forming on this date.

March 19. Von Pirquet test positive. Another biopsy sent to Dr. Royce for guinea pig inoculation. Reported no tuberculosis found, May 11, 1931.

March 27. Biopsy sent to Dr. Fred D. Weidman, dermatological research, University of Pennsylvania. Reported negative.

April 21. Intravenous injection of gold sodium thiosulphate, 0.5 gram (Triphal), repeated at seven-day intervals. Last treatment May 8. Improvement noted after second treatment.

May 11. There are five slightly discharging abscesses.

With this situation, excluding syphilis and mycotic disease, the only possible pathological condition that could be definitely considered is tuberculosis of the skin. To substantiate this diagnosis a clinical one is more valuable and especially by definite exclusion of the two preceding conditions. A histo-pathological confirmation would be desired. Accordingly in the past year three separate biopsies have been performed and submitted to competent pathologists for study, but no clear-cut definite tuberculosis process is reported. No tubercule is recognized, nevertheless, according to most authorities this failure will not exclude tuberculosis. Cutaneous tuberculin tests, the Von Pirquet, were, as mentioned, strongly positive. Guinea pig inoculation by Dr. Royce, negative for tuberculosis.

SUMMARY

No. 1. Four Von Pirquet tests strongly positive.

No. 2. Three X-ray studies of the chest throughout negative.

No. 3. Thorough examinations by internists negative.

No. 4. Three provocative Kahn tests negative (0.6 neo-ars.).

No. 5. All cultures negative for mycotic fungi.

No. 6. Urinalysis negative.

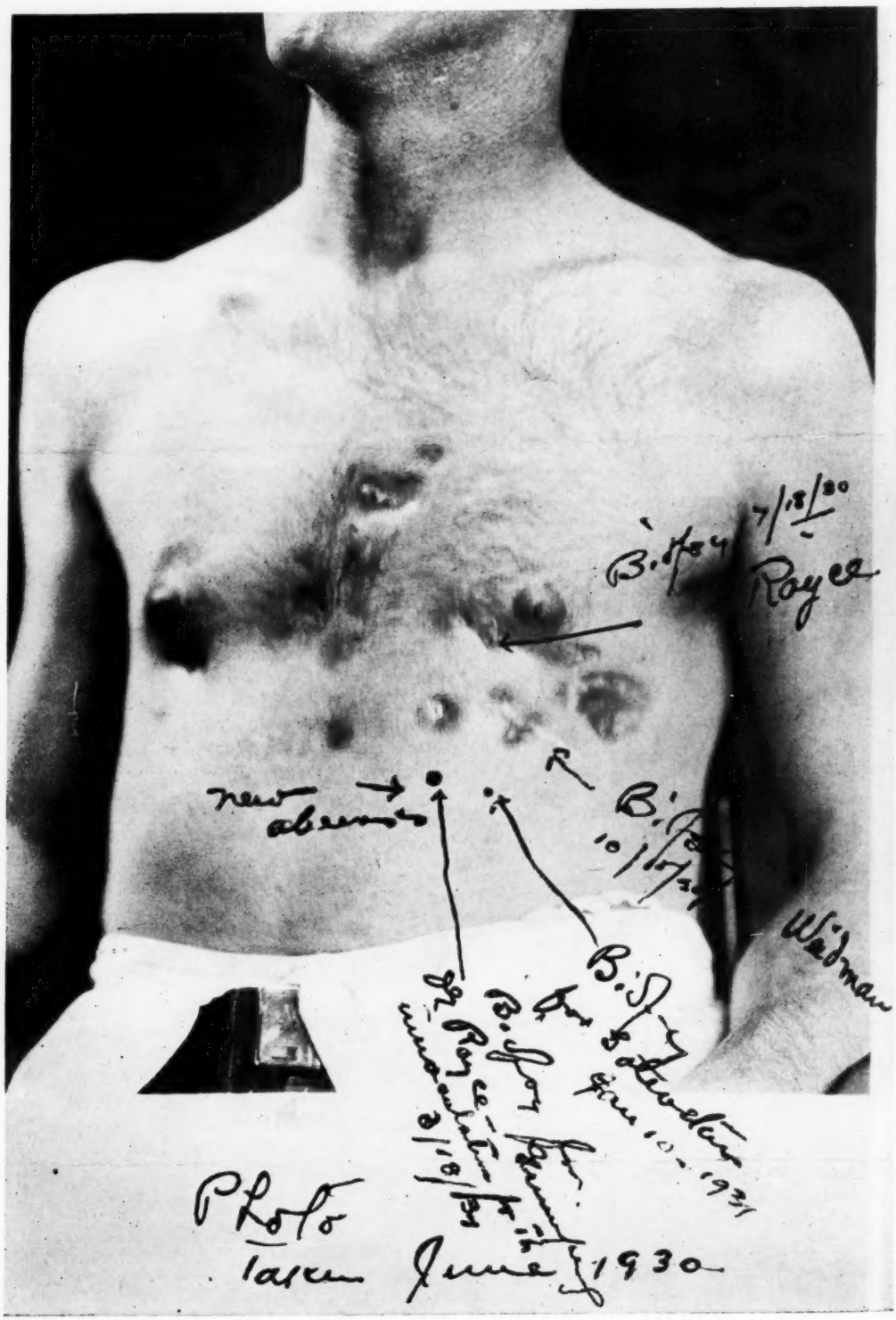
No. 7. Complete blood study negative (Dr. Kirk).

No. 8. Three biopsies negative for tuberculosis.

No. 9. Ten Kahn reactions negative.

In the matter of importance and the frequency of occurrence the clinical manifestations of tuberculosis of the skin could be enumerated as follows: Lupus vulgaris, tuberculosis cutis orificialis, tuberculosis verrucosa cutis, scrofuloderma and tuberculous gummata which is the variety under discussion. In the writer's experience all forms of tuberculosis of the skin are extremely rare in Florida. In the practice of twenty-one years devoted exclusively to the treatment of skin diseases, hardly one-half dozen cases of tuberculosis of the skin have been seen. Our bright sunlight and equitable climate are both antagonistic to the bacillus tuberculosis; whereas, in our large northern cities, and especially in Europe, tuberculosis of the skin is not infrequently encountered.

To the general medical man, the type of tuberculosis of the skin with which he is most frequently associated in his practice, would be the scrofuloderma type. In this type, skin ulceration is a secondary one, due to the invasion of the skin by the bacteria from a broken-down lymphatic gland or other focus of infection. Next, no doubt, would be tuberculosis cutis orificialis. This condition is somewhat analogous to the preceding, i.e., a secondary ulceration of the skin of the muco-cutaneous parts at the orifices of the body, as nose or annus, and from some tuberculous process in the body. In other words, the two pre-



Same as No. 1, showing location of biopsies.

ceding clinical varieties are secondary tuberculosis.

The case that is presented today, as was said in the preface, is classified as primary tuberculosis of the skin, tuberculosis indurativa, or tuberculous gummas. This variety is unquestionably rare, and not without some uneasiness does the writer adopt this classification for the unusual

Low power shows thinning of epidermis and loss of rete pegs and general infiltrative nature of the lesion.

skin ulceration, and only after three complete X-ray studies of the chest, and several examinations by competent internists. Then, too, from the fact that the patient has been observed twice a week for a year, and as previously mentioned, from a complete lack of lung pathology.

A thorough search of all available literature in the New York Academy of Medicine gives very limited reports on the occurrence of this clinical variety of tuberculosis of the skin other than on the limbs of young women. Nevertheless, V. Mucha[1] calls attention to four clinical cases of erythema induratum that occurred on the chest and upper limbs. This writer gives a complete review of the subject.

Sutton[2] devotes a paragraph under the heading of Tuberculous Gummata, and has this to say:

"Tuberculous Gummata are subcutaneous tuberculous lesions which develop independently of demonstrable lymphnodes. Ultimately, the integument over the entire mass breaks down and an ulcer is formed. The condition is probably identical with the 'tuberculous lymphangitis' of Bazin."

Under the title "nodular tuberculosis of the hypoderm", Wende has described an unusual form of tuberculosis of the skin characterized by the occurrence of painless, subcutaneous nodules which vary in size from that of a pea to that of an English walnut, and which break down and ulcerate. The chin, cheek and temples were involved in Wende's case. The overlying epidermis was normal in color. A few of the lesions underwent spontaneous involution. Histologically, the tumors were tuberculous in character. Animal inoculations proved positive. In some respects the lesions resembled the so-called "sarcoids of Darier-Roussy."

In the matter of the diagnosis of tuberculosis of the skin, one has to rely on a clinical diagnosis. To quote Satenstein[3] in a recent article, "To establish a histologic diagnosis of any one of the many clinical forms of tuberculosis of the skin, the tubercle must be present. When the tubercle is absent, other fields of investigation, such as the bacteriologic, serologic, and biologic, must be employed to arrive at a diagnosis. When the tubercle is present, these methods should be employed to substantiate the histological diagnosis." But for various reasons it is an established fact that the tubercle, though present, is very difficult, indeed, to locate.

In the matter of treatment of the case presented today, you will have gathered that during

Low magnification shows edema, thinning of epidermis and general infiltration.

the past year all possible measures at one's command have been used to cure this disease. Each remedy used has for a time seemed to produce some curative result, but, at this writing, the patient still has a number of active lesions.

In closing the report, the following summary is submitted. An atypical, chronic, subdermal abscess formation of two years' duration in an apparently healthy individual. By clinical exclusion, and resorting to the most thorough and complete laboratory facilities in the country, a

diagnosis is made of an unusual type of tuberculosis of the skin.

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2. Sutton: Sixth edition Diseases of the Skin, page 828.
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DISCUSSION

Dr. C. A. Andrews, Tampa:

Dr. Kirby-Smith has presented a most unusual case. I first saw this case last summer, at a meeting of the State Dermatological Society, and at that time Dr. Kirby-Smith remarked that he could not recall seeing any condition similar to it in his experience. The dermatologists familiar with this case, appreciate the real work he has done to arrive at a diagnosis.

In looking over the literature at my command, I find that the term "tuberculosis cutis" is used quite broadly for all skin diseases known to be caused by the tubercle bacillus, and that this heading has quite a number of subdivisions which apparently overlap, according to some writers in their case reports presented to the various dermatological societies.

Cases discussed have the same difficulty that Dr. Kirby-Smith has encountered, namely, laboratory facilities, in that it is often difficult to have histo-pathological findings substantiate the clinical findings, and, even after arriving at the diagnosis, tuberculosis cutis, to properly place the particular case at hand, in one of the localized forms of skin tuberculosis.

Personally, I feel that I agree with the diagnosis, though I have never seen a case of Bazin's disease in any other location except the classical picture, viz., on the calf on the lower part of the leg; however, several texts state that it may occur on the arms or elsewhere.

Dr. Kirby-Smith has definitely ruled out, to my satisfaction, fungus diseases, syphilis and cancer, drug rashes of the iodides and bromides, and the condition cannot be of the scrofuloderma, because it is primary, and scrofuloderma is always secondary.

Lowenstein, a number of years ago, stated that "the skin may acquire a predisposition to tuberculosis if the infection occurs in it. Tuberculosis of the skin is rarely associated with a progressive tubercular infection of other organs."

The essayist has not been able to find any evidence of tuberculosis elsewhere in this case.

At this point, however, I want to give the deductions of the Third Congress of French-speaking Dermatologists. It was stated that tuberculosis of the skin was only an expression of general tuberculosis, and demanded general treatment.

I think in discussing this paper one should stress the rarity of tuberculosis of the skin in Florida. In my experience I have seen only four cases in Tampa. This does not of course include lupus erythematosis, which is still a disease of unconfirmed tuberculous etiology.

In the treatment of tuberculosis of the skin so many methods have been used, for local applications, that it is hard to recommend any single one that stands out. Ultraviolet therapy is excellent; however, the Finsen light should be more ideal, since it has more penetration.

In the last few years the gold preparations, intravenously, have been commented on most favorably. Tuberculin has its supporters, but both should be used carefully and cautiously.

Abroad, the salt-free diet, first described by Gerson, and varied by Sauerbruch and Herrmanndorfer, at the present time is apparently quite popular. Briefly, this diet eliminates the use of salt in the preparation of food. Meat is given sparingly or not at all, and all foods are rich in fats, but deficient in carbohydrates. To provide for vitamines plenty of fresh fruit and vegetables are given, fat from unsalted butter, and milk and milk gruels.

An attempt is made to have the patient take food at least seven times daily. Cod liver oil is given twice daily. It is found that by the addition of phosphorus, the patient does better than with plain cod liver oil.

In addition the light treatment, sunlight as well as ultraviolet rays, is a valuable adjunct. Many reports have shown remarkable results with this method of treatment in tuberculosis of the skin, but enough time has not elapsed to properly evaluate this method.

In conclusion, I wish to state that I have enjoyed the paper of Dr. Kirby-Smith and feel that he has properly classified this unusual skin condition.

Dr. J. Frank Wilson, Jacksonville:

This is one of the most unusual cases I have ever seen. I have followed it rather closely for the past year, having seen it once or twice a month during that time. It is a most baffling case from every standpoint, both as to diagnosis and treatment. I have made and discarded one diagnosis after another and finally through a process of

elimination have reluctantly agreed that it must be primary tuberculosis of the skin. I have never seen a case of tuberculosis of the chest wall without involvement of the deeper structure, but repeated X-ray examinations seem to eliminate any disease of the lungs or ribs. Laboratory work was done by some of the best men in the United States and all their findings were completely negative. It seems reasonable to suppose that with these thorough examinations that the causative factor would have been found unless it is tuberculosis for it is almost impossible to diagnose tuberculosis of the skin by laboratory methods.

Tuberculosis of the skin is extremely rare in Florida. I have thought once or twice that I had seen a case but it always proved to be something else. Only recently I saw a case that was clinically identical except for the location which happened to be over the ischio-sacral articulation, but as the lesions healed when thoroughly cauterized and have not returned in two months they were probably not tuberculous.

In the case under discussion, the lesions first appear as abscesses and seem to be firmly attached to the bony structure beneath. Upon being opened there were sinuses extending deep into the tissues; in some cases as much as two inches, but after healing these tracks disappeared and the scars are freely moveable showing no connection to the ribs at all.

I am still slightly dubious about the diagnosis. Potassium iodide should not be of benefit in tuberculosis but seems to help this case. Gold sodium thiosulphate should be of benefit and apparently it was for a while, but after several weeks' treatment the patient recently returned with five new lesions.

I consider myself fortunate to have seen the case and to have been allowed to discuss it. The amount of work done by Dr. Kirby-Smith has been prodigious and the case excellently presented.

Dr. J. L. Kirby-Smith, Jacksonville (concluding):

I had hoped that Dr. Royce, who is present today, would have been allowed to discuss this case, as he is familiar with the difficulties encountered in confirming the clinical diagnosis.

I think that sometimes we become discouraged with the help and cooperation that we get from the laboratory. We should not, though. They merely report what they see and we take their report and incorporate it in our diagnosis. Such has been the case of the writer, and I assure you that he has employed the best laboratory facilities available.

The case that I presented today is unquestionably unusual and, no doubt, tuberculosis of the skin. The point that I have emphasized is, so far as can be ascertained, that the lungs and chest are negative for disease, and such being the case, the scrofuloderma type of tuberculosis of the skin would be left out of consideration. Accordingly, the inflammatory abscessed processes breaking down would be classified as tuberculous gummas. The various measures and treatments that were enumerated were carefully carried out and, the patient was under constant observation. Today the patient has five lesions present.

In regard to the remarks of Dr. Andrews about lupus erythematosis, we do not consider this condition now-a-days as being related to tuberculosis as such was the case several years ago. It is generally considered that the skin condition is due to some focal infection, plus external irritants.

In Florida, lupus erythematosis is quite often encountered. The bright sunlight seems to stimulate this chronic inflammatory process. These patients are usually considered as photo-sensitive.

In concluding, I would state that it is my experience that tuberculosis very infrequently originates in our state, and especially rare is tuberculous manifestation of the skin. Our clear sunshiny climate is prohibitive.

I thank you very much.

SOME PROBLEMS IN UROLOGIC DIAGNOSIS*

W. Houston Toulson, M.D.,
Baltimore, Maryland.

Kidney infections illustrate very well many of the difficulties in urologic diagnosis. Most infections of the kidney pelvis promptly invade the kidney tissue giving rise to pyelonephritis. This occurs in such varying degrees that it is impossible to estimate the kidney damage, although some idea of renal impairment is obtained by the phthalein test of the two kidneys. This invasion of the nephritic substance also explains why a chronic infection is so difficult to clear up. These cases of pyelonephritis have an entirely different clinical picture from such intrinsic kidney inflammations as acute nephritis or Bright's disease and have entirely different urinalyses. For example, in pyelonephritis there is relatively less albumin and fewer casts than in nephritis. Periodically

*Read before the Dade County Medical Society, Miami, February 6, 1931.

there is a negative urine in pyelonephritis especially in those cases where the urine is trapped.

In the acute cases pyelonephritis is occasionally ushered in with chills when it is often mistaken for influenza. The chronic types often have pronounced symptoms of nausea, vomiting, diarrhea, constipation, abdominal distention and generalized abdominal pain, especially when there is a poor kidney function. These symptoms influence an incorrect diagnosis of lesions in the stomach or intestine. On the other hand, it is astonishing how much kidney damage can occur with so few symptoms. The distinguishing feature in the diagnosis lies in carefully repeated urinalyses.

The bacterial invaders in most of these cases are the b. coli, staphylococci aureus and albus, streptococci and pyoceaneous, occasionally the pneumococcus and very rarely the gonococcus. The b. coli usually overgrows the other infecting organisms in culture and occasionally masks an acid fast infection. B. coli infections at times give rise clinically to a bradycardia and leucopenia; this is probably explained by the fact that the organism belongs to the typhoid group.

The cause of these renal infections is not always clear. Ascending, hematogenous and lymphatic avenues have all been discussed elsewhere. There can be no conception of infections in the upper urinary tract without consideration of the adnexal glandular structures and of the conditions that go hand in hand with infections, namely calculus formations and other common urinary obstructions, as urethral strictures and ureteral strictures, diverticulations of the bladder, aberrant renal blood vessels, abdominal tumors and anomalies of the kidneys and ureters, all of which favor stasis and infection. These conditions have to be recognized and treated before the secondary pathology can be cured.

There are many things in the adnexal structures, as the prostate and seminal vesicles, to be considered before going to the teeth, tonsils, sinuses, etc. On the other hand, it has been shown that prostatitis and seminal vesiculation may be secondary to infections outside the urinary tract.

The gall-bladder and appendix may also cause confusing conditions in the urinary tract. Recently in the University Hospital in Baltimore there have been three cases of persistent right-sided pyuria with normal appearing pyelograms. These patients all had pain in the right lower quadrant, in each instance there was a postcaecal appendicitis; the tip of the appendix was attached to the peritoneum immediately overlying the ureter. The pyuria cleared following an appendectomy. Apparently then, it is possible to err on the side of neglecting an inflamed appendix in dealing with urinary infections. Where there is any doubt the appendix had better be removed.

There is one very common condition that gives rise to so many vague and sometimes distressing symptoms that it is a good practice to rule it out before considering upper urinary tract pathology and that condition is verumontanitis. In my experience this condition may mimic the symptoms of almost any urological condition. The frequency and urgency and at times hematuria resembles a tuberculous infection so much that it seems that the acid fast organism must be found. The veru in these cases is so enlarged from inflammatory edema that it almost completely blocks the urethra.

Keyes says, "Quite frequently I see in consultation, patients with kidneys and prostate inflamed who have been vainly treated for months and yet need only a few massages of prostate and seminal vesicles with a whispered word of advice on sex to cure them."

In spite of the propaganda that urologists have tried to spread we still see too few children with pyelonephritis. Fortunately, most of these cases clear up with proper medication but when you consider the frequency of urinary infections in children it is unlikely that the chronic cases, especially, escape damaged kidneys, which might be improved by proper drainage and by the recognition and removal of the cause of the pathology.

Where there is a disturbance of the contour of the kidney pelvis pyelograms will usually demonstrate the condition, but even this is not easy of interpretation in early pathology, since there are so many variations of the normal pelvis, not to mention technical errors of a poorly filled pelvis.

It is manifestly unfair to the roentgenologist to expect him to be able to make a diagnosis from the appearance of a few, and sometimes one, film when the urologist who has all the clinical data at his disposal is often confused.

With the advent of the idea of intravenous pyelography impressions of urinary tract both physiology and pathology should be better understood as its use becomes more general. Already its advantages are seen, if not in demonstrating the pathology at least it gives an idea which may be brought out in sharper detail by an injected urogram. Gross changes, however, such as ptosis, hydronephrosis and anomalies should be identified ordinarily and in any cases where there

is urinary stasis. In children and in cases difficult or impossible to cystoscope its use will be invaluable. Already there are indications that the dose of these agents for intravenous use will be smaller and the delineation of the shadows in the X-ray be better.

At best, as we have seen, pyelographic interpretation will lead us far astray in our diagnosis unless it be correlated with the other data. One of the most signal advances in diagnosis has been the application of moving pictures to pyelograms. This work is being done by Cumming of Detroit. It means that instead of having to base a diagnosis on one pyelogram, which, as has been said, is some times made under adverse circumstances, by means of the cinex camera there are many films to study. In other words, this cinex camera practically gives us a permanent fluroscopic record. Hence it is evident that with a combination of intravenous urography and the moving pictures our diagnostic facilities are vastly improved and the patient saved much discomfort. It is also apparent from the combination that much information about the physiology of the kidney and ureter will be obtained. The expense of these agents so far prevents their general use, but later they will probably be made more available.

In these days of increasing traumatic surgery the kidneys come in for important notice. Rupture of the capsule of the kidney not uncommonly occurs. I have in mind a patient who developed a doughy mass in the right lower quadrant following injury to the right kidney, presumably a perinephritic hematoma. The general condition of the patient permitted a policy of watchful waiting with the result that the mass slowly absorbed without infection and later examinations showed a normally functioning kidney on the injured side. With careful observation many of these ruptured kidneys may be saved.

Calculi of the kidney and ureter still occasion confusing diagnostic impressions. I recently heard a roentgenologist of international reputation say that he believed that almost 30 per cent of small ureteral and kidney calculi were missed in plain films. It is, therefore, not uncommon for a patient to pass an undiagnosed calculus and an infection clear up following ureteral dilatation. Due to difficulty in technique the wax tipped catheter is not used with sufficient regularity in the male.

Nephrotosis in its varied positions causes symptomatology commensurate with its change in position. Some of these cases of slight mobility and rotation are extremely difficult of diagnosis. Like early renal tumors, repeated pyelograms at intervals are necessary. Dr. Lewis has shown that nephroptosis can occur without a general visceroptosis. I agree with him that more of these should be operated and I believe that the method of operating described by Deming in the Journal of the American Medical Association some months ago is the operation of choice.

Anomalies of the kidneys and ureters may be easily overlooked unless there be a careful search in the bladder and urethra for aberrant ureteral openings and unless the precaution be taken of drawing the catheter well down in the ureter before the injection preliminary to pyelogram. The anomalous conditions of the urinary tract may and do give rise to very misleading symptoms. By virtue of their tendency to urinary stasis they favor persistent infection, which at times is difficult to cure.

Tumors of the kidney should be written about as an entire chapter; however, a few words will suffice here. Early diagnosis, of course, is essential. Repeated pyelograms may be necessary to watch the changes as they occur in the kidney pelvis before positive diagnosis may be given. Familiarity with interpretation of pyelograms is of great importance here. Cysts of the kidney afford the same difficulties of early diagnosis, but fortunately they are rare.

Tuberculosis of the kidney also causes extreme perplexities of diagnosis in early pathology, especially in the absence of finding the organism. I still believe that carefully searching the urine for the organism is by far the best test. I am glad to see from the recent literature on tuberculosis of the kidney a strong tendency toward conservatism in the treatment of this condition.

The technical developments in diagnostic methods have been so rapid throughout medicine that occasionally it is wise to pause and evaluate the newer procedures.

In order to obtain diagnoses easily and quickly specialists particularly are apt to forsake their clinical knowledge for impressions gained by instrumentation.

It is quite possible to err in paying too much attention to method and not enough to clinical evidence. Von Lichtenberg said last year at the meeting of the American Urological Association that danger had arisen from precise instruments of diagnosis. At times they cause "defects of conception and defects of knowledge which give rise to therapeutic failures."

The Journal of the Florida Medical Association, Inc.

Owned and published by the Florida Medical Association, Inc.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of Congress of October 3, 1917; authorized October 16, 1918.

Published monthly at Jacksonville, Florida. Price $3.00 a year. Single numbers, 30 cents.

Contributions for publication in this journal, whether scientific papers or reports of County Secretaries, should be typewritten.

Address Journal of the Florida Medical Association, Inc., Box 81, Jacksonville, Fla. Telephone: 5-6186

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FLUOROSCOPIC EXAMINATIONS OF UNIVERSITY STUDENTS

Kattentidt reports the findings among students of the University of Munich. In the winter of 1929-30, he made fluoroscopic examinations of 1,768 students (1,363 males and 405 females) as part of the compulsory physical examinations at matriculation. Some evidence of tuberculosis was found in 14.5 per cent. In most cases, the tuberculous lesion was inactive, a few were partially active, but in six cases, or 0.34 per cent of the entire series, there was an open lesion. These

six cases all occurred in males. At the same time, 772 students (699 males and 73 females) were examined at their own request. The findings were substantially the same as among the "compulsory" group. In the previous summer semester (1929), the percentage of tuberculous lesions found in 1,437 male students was 22.6 per cent and 0.49 per cent open lesions, and of 360 female students 15 per cent tuberculous lesions and 0.28 per cent open lesions.

Combining the findings for the two semesters of compulsory and voluntary examinations of 4,836 students of both sexes, the results were as follows:

Inactive lesions	14.8 %
Partially active lesions	1.3 %
Active closed lesions	0.17%
Open lesions	0.39%
Total tuberculous lesions found	16.66%

The author cites the findings of Kayser-Petersen and Wiewiorowski, who examined male university students. Adding this series to his own, he finds that in the combined groups of 6,513 apparently healthy young men between 20 and 30 years of age, 30 cases or 0.46 per cent had open tuberculosis. This figure, he believes, represents the incidence of tuberculosis among this group at a certain definite time.

Development of Activity During Semester

Further cases of active tuberculosis may develop in the group, as shown in repeated examinations. Thus, of 2,296 students examined in the summer semester of 1929, four more students (male) developed open tuberculosis and one an active closed tuberculosis up to June 25, 1930. Of the students examined in the winter semester of 1929-30, one additional case of active closed tuberculosis developed. Thus, in the course of a year, the incidence of open tuberculosis increased from 0.48 per cent to 0.65 per cent.

Brief clinical histories are given in the eleven cases (eight with open and three with closed lesions) discovered in the winter semester. The lesion was usually of the chronic interstitial type; the sputum was positive for tubercle bacilli in seven cases, negative in three cases and no sputum was obtainable in one case. Physical examination showed no evidence of tuberculosis in seven of these eleven cases. This would indicate that physical examination alone fails to reveal tuberculosis in a larger percentage of cases than has been suspected. In these eleven cases, eight had open lesions as shown by the positive bacteriological findings in seven cases and the clinical findings in one case. Yet none of these showed large areas of destruction; the author has often been surprised to find tubercle bacilli in the sputum in cases in which there was little evidence of a destructive process.

Supervision of Cases Necessary

Continuous supervision of such cases is necessary, however, as shown by the case of one student, who showed hilus changes on her first examination, and no definite changes on re-examination half a year later (no lesions in the pulmonary tissue). Yet ten days after this second examination, this student had a pulmonary hemorrhage, which was thought to be due to bronchiectasis, as the sputum was negative and the red cell sedimentation velocity was normal. As a matter of precaution, she was sent to a sanatorium for observation and there pulmonary focal lesions developed suddenly with positive sputum; the tubercle bacilli persisted in the sputum for several months. This was the only case in which signs of activity developed in cases with inactive lesions within six months. But this is not remarkable, since tuberculosis is a decidedly chronic disease; it indicates that these cases must be kept under prolonged supervision.

Among 44 cases diagnosed as partially active in the summer semester (1929) two students developed symptoms that necessitated sanatorium treatment. In one of these cases, there was an increase in the pulmonary lesion, and the sputum showed a few tubercle bacilli. In the second case, the pulmonary lesions showed little change, but new adhesions had developed, and the patient's general condition was poor.

Types of Lesions

A study of the types of tuberculous lesions found at the different ages in the 2,540 students examined in the winter semester showed 457 students under twenty years of age (17 to 19), the great majority over twenty years of age (from 20 to 30 years). The early forms of tuberculous lesions, including exudative pleurisy, occurred only at the earlier ages, mostly at twenty years or younger. Most of the cases of open tuberculosis occurred at twenty-one years of age or later, only

two cases at the age of twenty, and none before the age of twenty. The highest percentage of cases of open tuberculosis occurred at the age of twenty-one (in 0.78 per cent of students at this age). The focus of infection was demonstrable only in six of the nineteen active cases of tuberculosis.

Health Care of Students

The records of the results of the physical examination and of the fluoroscopic examination are filed with the university. The student is also given a printed card showing the result of the fluoroscopic examination, and whether there is any indication of tuberculous lesion in the lung, whether such lesions are entirely inactive or show any signs of activity, and whether any type of athletics is permissible. This brings the patient into contact with the athletic medical director, where this is advisable, and indicates whether further supervision or examination is desirable, or whether immediate treatment is necessary. The author is of the opinion that certain types of sports and gymnastic exercise are of definite value in the treatment of inactive tuberculosis; and that the close cooperation established with the athletic medical director by the system adopted is of definite value for the students, and for the further study of the effect of athletics on respiration and circulation in relation to the effects on tuberculosis.—*Fluoroscopic Examination in the Second Semester at the University of Munich, B. Kattentidt, Ztschi. f. Tuber., 58:209, 1930 (October).*

THE JOY OF BEING THE EDITOR

Getting out this Journal is no picnic.
If we print jokes, people say we are silly.
If we don't, they say we are too serious.
If we clip things from other Journals,
We are too lazy to write them ourselves.
If we don't we are stuck on our own stuff.
If we stick close to the job all day,
We ought to be out hunting up news.
If we do get out and try to hustle,
We ought to be on the job in the office.
If we don't print contributions,
We don't appreciate true genius.
And if we do print them,
The Journal is filled with junk.
If we make a change in the other fellow's write-up,
We are too critical.
If we don't, we are asleep.
Now, like as not, some guy will say
We swiped this from some other Journal.
WE DID.*

*So did we. Our swipe was from The True Light, a a spiritualistic journal.

CORRESPONDENCE

The Journal is pleased that members of the Association are taking advantage of this column to express their individual views.

This month we are privileged to publish letters from two of our well-known members.

Views of our members and comments on letters published are solicited.

From the President, Dr. G. H. Edwards, Orlando, August 31, 1931:

I have read with much interest the communications published in the Journal the past two months. I am firmly convinced that creating the office of president-elect will be a good thing for the Association and especially good for the individual whom we would honor later with the office of president. The president-elect, knowing that he soon will have to shoulder the responsibilities of the office of the president, will be anxious to gain all possible information regarding routine procedure; will have in mind and become versed in the basic policies of the Association which today are followed out in a somewhat hit-and-miss manner by the untutored though willing incoming president; will become acquainted more intimately with the outstanding men in various parts of the State, because later he will be called upon to make committee appointments and being conversant with their abilities will enable him to make better selections; which three factors will make of him a better president.

There are a number of phrases and several sections of the Constitution and By-laws which need to be clarified and/or rearranged. I have called the attention of the Executive Committee to these and it was preparing a recommendation regarding changes to present to the Convention in May at Sarasota, but since the question of having a president-elect has arisen and since the sentiment seems to be so universally in favor of one, I am now taking up the matter of a more careful revision of the Constitution and By-laws with the Executive Committee and if it agrees with me in this matter, I will at once appoint a special committee that it may have time to carefully consider the matter and frame the necessary revision to present to us in May.

(Signed) G. H. EDWARDS, M.D.

From Dr. L. M. Anderson, Lake City, September 1, 1931:

After reading the Editorials and correspondence, "Shall we have a president-elect?" I feel there is quite a bit to be said on both sides.

If having a president-elect would improve our Association, I am in favor of it, and I see no

reason why it would not. It would give the president one year to get acquainted with the work of the Association. If the Association sees fit to change the Constitution, it should be stated that the president-elect should be a member ex-officio of all committees, and should attend all the meetings possible of the committees.

Now, with regard to the annual scientific program: Great good would come to the Association by a well balanced program. It should contain papers in which all classes of practitioners are interested.

I see no reason why there should be any very great change in the Constitution. It should merely be brought up to the present time. It is very true that many changes have occurred in the practice of medicine in the past; every doctor was formerly unto himself, but today he is just a cog or unit in a highly organized profession with its many branches and ramifications.

Let us consider well the changes we will make in the Constitution. Our Association has advanced along the road with the profession. We are not hoary with age yet.

(Signed) L. M. ANDERSON, M.D.

MEETING OF PUBLIC RELATIONS COMMITTEE

A meeting of the Public Relations Committee was held on August 30th, 1 p. m., at the Hotel Marion, Ocala, Chairman H. C. Dozier presiding. The following members answered roll call: Drs. H. C. Dozier, Ernest B. Milam, Homer L. Pearson, and J. Ralston Wells. The following members of the Executive Committee were present: President G. H. Edwards, Chairman Gerry R. Holden, Dr. W. H. Spiers, and Business Manager Stewart Thompson.

Pursuant to the regular order of business, the question of arrangement for State radio broadcasting was discussed. Dr. Dozier reported that Major Garland Powell, Director of Station WRUF, University of Florida at Gainesville, had indicated cordial cooperation and the following excerpts of a letter relative to this proposition was read:

"I would suggest the following outline for the proposed Medical Association Broadcasts. I am going on the supposition that the programs will be of one-half hour duration.

1. Opening Announcement—one minute.
2. Music—three minutes.
3. Introduction of Speaker—fifteen seconds.
4. Talk—ten minutes.
5. Announcement—thirty seconds.
6. Music—three minutes.
7. Introduction of Speaker—fifteen seconds.
8. Talk—eight minutes.
9. Announcement—thirty seconds.
10. Music—two minutes, thirty seconds.
11. Announcement—one minute.

"I think the music should consist of a string organization, and string or voice solos. Do not forget to add the human interest touch to your talks. Also explain all technical terms.

"Under separate cover I am sending you 'Radio Dont's', as well as some radio cotton (noiseless paper) to be used for the talks.

"As to the dates, I would suggest October 14th, November 11th, December 30th, January 6th, February 10th, March 16th, April 20th, May 21st. My reason for putting the two so close together in December and January is due to the fact that this is the holiday season, and people are home listening to the radio. If there is any other information you desire please let me know."

The dates as suggested by Major Powell have been adopted. Speakers are therefore scheduled for the following dates:

October 14th—"Some Interesting Medical History in Florida."—Edward Jelks.

November 11th—"The Florida Medical Association; What It Is and the Value of Its Influence to the State."—T. Z. Cason.

December 30th—"The Medical Profession"—G. H. Edwards.

January 6th—"The Medical Profession—Its Contributions to Charity in the State of Florida"—Ralph N. Greene.

February 10th—"The Medical Profession—Its Economic Contributions to the State of Florida."—H. C. Dozier.

March 16th—"The Medical Profession — Its Value to Society."—M. A. Lischkoff.

April 20th—"What Surgery Has Contributed to Society."—Roy J. Holmes.

May 21st—"What Internal Medicine Has Contributed to Society."—Robt. M. Harris.

The secretary was instructed to notify the above Doctors as to their expected time of appearance.

The radio broadcasting from individual sections of Florida was as follows: Dr. John S. McEwan reported, through Dr. Edwards, "satisfactory arrangements could be made with station in Orlando"; Dr. Homer L. Pearson reported that fifteen minutes a week could be arranged for broadcasting in Miami; Dr. Ernest B. Milam re-

ported that satisfactory arrangements could be made in Jacksonville; Dr. H. Mason Smith reported, by letter, that there had been no arrangements made in connection with the station in Tampa. The Committee has on file approximately forty radio talks on various subjects, from a squib 30 seconds in length to a 20-minute talk. These topics will be mimeographed and sent to all county medical secretaries, and from this list the weekly subject can be chosen; the entire chosen article will be sent to the society requesting it, and an individual speaker may then use the article as written, or rewrite it according to his own ideas, or merely use it as a structural background for an entirely new talk.

The Motion Picture Section was next discussed. The Committee has on file a number of motion picture releases. The feasibility of sending this list to all the county medical secretaries, having their Society discuss the time and which film or films would be acceptable, was discussed. This plan would necessarily consume several months, and very probably would not be satisfactory, therefore it was moved and seconded that "this Committee arrange a program and notify each county secretary a considerable length of time in advance the picture or pictures he should expect, asking their societies' cooperation in arranging a program around the film."

The next topic brought up for discussion was the Press Bureau. Newspapers, wherever possible, and especially in the larger centers, will be given material to print. These articles will number fifty-two, and one should appear each week. All articles put in the press will be released over the printed signature "Florida Medical Association," but to indicate the authority for the same, these articles will be signed by the President of the Florida Medical Association. This signature will remain on the article for the files of the newspapers, but not on the printed article.

The Speakers' Bureau, which also takes in a sub-heading of the Scientific Bureau, was discussed. It was thought that this was too large an undertaking to start synchronously with the other Bureaus, and should be withheld temporarily until the other Bureaus were well under way; therefore it was moved and seconded that "this Committee adopt the three major objectives for this year, 1931-1932, namely, first, Radio, incuding State and local broadcasting; second, Motion Pictures, and, third, Press." This motion was carried.

It was brought to the attention of the Committee that there have been in the past, are now, and will be in the future various individuals and agencies with objects of pecuniary gain, who advocate employing them for various publicity schemes. Since the State has undertaken this work through the Committee of Public Relations contact as outlined, it was moved that "any scheme for the purpose of public education which is submitted by any person or persons for sale, direct or indirect, to a County Medical Society should be submitted to this Committee before any agreement is made, since this Committee has in its possession all material necessary, which will be given to any County Medical Society free of charge. All County Secretaries are to be notified of this resolution." Motion carried.

Both Dr. Edwards and Dr. Dozier remarked on the committee members' absences, and it is their request that all members make an earnest effort to be present at the next and all other meetings. At each meeting the various phases of the work are discussed and it is important that adequate personal cooperation of all members is obtained; it is necessary and vital to the success of this movement. If any member feels that it is impossible for him to attend all the meetings, barring acute illness or accidents, his request to be relieved of the appointment will be approved by the Committee and sanctioned by President Edwards.

It was considered highly important that the members of this Committee and all speakers that intend to speak over the radio attend a meeting for the purpose of learning the approved methods of talking over a radio, and accustom themselves more or less to them. With this end in view, the next meeting will be held in Gainesville Thursday, October 8th, which will be well in advance of the first radio talk to be delivered by Dr. Jelks from that station on October 14th. The hour and the place for this meeting will be announced later. All committee members, Executive Committee of the State and all State Broadcasting appointees will be notified to be present at this meeting.

Meeting adjourned at 3:15 p. m.

(Signed) J. RALSTON WELLS, M.D.,
Secretary, Public Relations Committee.

Dr. Stewart Thompson, through the Florida Medical Association, is to make mimeographed copies of all radio talks and press articles. All press releases, as agreed in the meeting of July 5th, will come through the Executive Committee, and this Committee, from the offices of the Florida Medical Association, Box 81, Jacksonville.

STATE NEWS ITEMS

A pre-convention meeting was held by the Sarasota County Medical Society, August 10, 1931. The meeting was held at Dr. Joseph Halton's cottage on Sarasota Beach. The object of the meeting was to put in motion plans for entertaining and conducting the Florida Medical meeting to be held in Sarasota in 1932. A survey of the city was made to determine the place best suited to meet the various requirements. A general discussion of plans took place and the Sarasota County Society especially wishes to thank the following men for their suggestions and help:

Dr. G. H. Edwards,
Dr. Shaler Richardson,
Dr. Gerry Holden,
Dr. M. J. Flipse,
Dr. Wm. H. Spiers,
Dr. Stewart Thompson.

All of these men were present and we feel that with such help the 1932 meeting is bound to be a big success.

* * *

Dr. N. A. Baltzell of Marianna was recently appointed to succeed himself as a member of the State Board of Medical Examiners.

* * *

Dr. J. H. Pound, a member of the staff of the Florida Hospital for the Insane at Chattahoochee, was appointed superintendent to succeed the late Dr. James Q. Folmar.

* * *

Dr. J. E. Abras of Miami was convicted by a jury in the United States District Court on July 14th of selling narcotics. Dr. Abras is not a member of organized medicine.

* * *

Dr. and Mrs. Frank C. Metzger of Sarasota announce the birth of a daughter, Martha Metzger, on July 3, 1931, at the Sarasota Hospital.

* * *

Dr. J. S. McEwan, Orlando, has returned to Baltimore for further treatment of an eye which kept him on the inactive list for three months last winter.

* * *

Dr. C. E. Tumlin of Miami recently made a trip to Tallahassee in the interests of the State Board of Medical Examiners.

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Dr. E. C. Swift, Jacksonville, secretary of the Florida East Coast Medical Association, announces that the proposed meeting in Jacksonville on October 2 and 3 has been postponed indefinitely. A personal letter has been mailed to each member, containing full information of action taken by the officers.

* * *

Dr. G. H. Edwards, Orlando, president of the Association, made a brief visit to Jacksonville this month, calling on the secretary and business manager. President Edwards' enthusiasm and interest in organized medicine is keenly felt wherever he goes.

* * *

Dr. Bundy Allen of Tampa returned August 16th on the liner Dresden from Paris, having attended the International Congress of Radiology.

* * *

Dr. George C. Johnston, who has spent several months at Bemus Point, New York, has returned to 217 E. Amelia Avenue, Orlando.

* * *

The marriage of Dr. Kenneth Phillips of Miami to Miss Shirley LeMon took place July 3d at Miami.

* * *

The American College of Physicians will hold its Sixteenth Annual Clinical Session at San Francisco with headquarters at the Palace Hotel, April 4-8, 1932. Following the Clinical Session, a large percentage of the attendants will proceed to Los Angeles where a program principally of entertainment will be furnished April 9, 10 and 11.

Announcement of the dates is made particularly with a view not only of apprising physicians generally of the meeting, but also to prevent conflicting dates with other societies that are now arranging their 1932 meetings.

Dr. S. Marx White, of Minneapolis, is President of the American College of Physicians, and will arrange the Program of General Sessions. Dr. William J. Kerr, Professor of Medicine at the University of California Medical School, San Francisco, is General Chairman of local arrangements, and will be in charge of the Program of Clinics. Dr. Francis M. Pottenger, of Monrovia, is President-elect of the College, and will be in charge of the arrangements at Los Angeles. Mr. E. R. Loveland, Executive Secretary, 133-135 S. 36th Street, Philadelphia, Pa., is in charge of general and business arrangements, and may be addressed concerning any feature of the forthcoming Session.

Dr. L. H. Dame was host to the Pasco-Hernando-Citrus County Medical Society Thursday evening, August 13th, in Inverness. A delectable steak and fried chicken dinner with other tasty dishes, was served at the Orange Hotel at seven o'clock. After dinner, the doctors were invited over to Dr. Dame's office where discussions and case reports were given. Dr. A. C. Hamblin, district health officer, of Brooksville, gave a splendid address on public health work. The meeting adjourned upon Dr. Moon's invitation to the society to meet with him in September.

* * *

Dr. J. Maxey Dell of Gainesville recently announced his intention to run for Congress. If Dr. Dell is elected, he will succeed Representative R. A. Green.

* * *

Dr. N. A. Upchurch, city health officer of Jacksonville, recently called a meeting of the City Board of Examiners of Midwives to formulate regulations conforming to the 1931 legislative act governing activities of these practitioners. Dr. A. D. Stollenwerck and Dr. S. R. Norris are the other two members of the board.

* * *

Dr. S. A. Folsom, Orlando, has returned after spending two months in Pennsylvania vacationing.

JAMES QUITMAN FOLMAR

The sudden death of Doctor James Quitman Folmar, Chattahoochee, removes one of the outstanding figures of the Florida Medical Association, a public servant that the state could ill afford to lose.

Dr. Folmar was born May 11, 1891, at Goshen, Alabama. His preliminary training was received at Piedmont College, Demorest, Ga. He received the degree Doctor of Medicine from Emory University School of Medicine in 1914. He served as interne at Piedmont Sanatorium, Atlanta, then as assistant to the late Dr. Floyd McRae for four years, after which he entered the World War as first lieutenant and was stationed at Augusta, Ga. Following the war, he located for general practice at Bonifay. Within a short period, he was made clinical director and chief surgeon to the Florida State Hospital, and in addition to this position, he was appointed by Governor Martin

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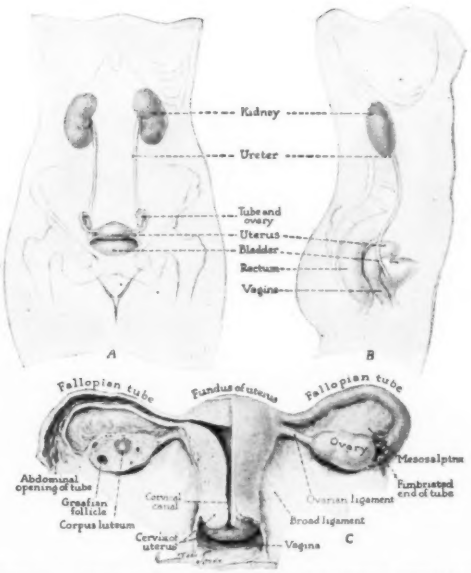

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as superintendent of this institution. He held both positions at the time of his death.

Dr. Folmar married Miss Leila J. Turner, June 1, 1918, at Anniston, Ala. Mrs. Folmar and one daughter Martha Elizabeth, age 12, survive. Dr. Folmar succumbed to coronary sclerosis on August 8th, and was buried August 10th at Oxford, Ala., where his wife and daughter go to make their home with Mrs. Folmar's parents.

Dr. Folmar was ambitious, conscientious, quiet and unassuming; he inspired confidence, loyalty and devoted friendship from those with whom he came in contact. His greatest attribute was that he was truly a friend to humanity. By virtue of these characteristics he was naturally sought as a leader in and outside of his profession. He was past president of the Chattahoochee Luncheon Club, past worshipful master of the Masonic lodge, past president of the second district medical society, and, at the time of his death, second vice-president of the Florida Medical Association.

"WHEREAS, we, the members of the Second District Medical Society, feel deeply the loss of our brother and past president of this Society, Dr. James Quitman Folmar;

"*Therefore, be it resolved*, that the members of the Second District Medical Society express their sorrow in the passing of Doctor Folmar; that a copy of this resolution be entered on the minutes of this Society; that a copy be sent to members of his family and that the same be published in the Journal of the Florida Medical Association and in the local press.

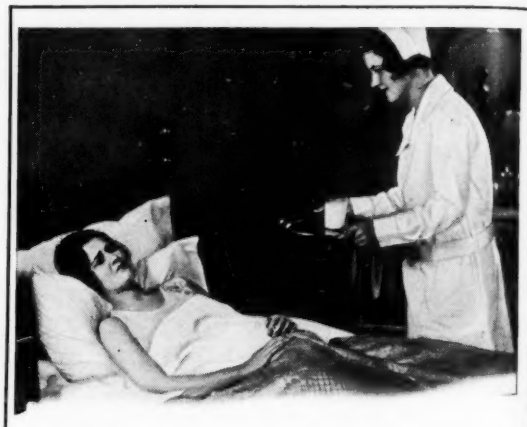
JULIUS C. DAVIS, M.D.,
B. F. BARNES, M.D.,
Committee."

Dr. Anna A. Darrow, Ft. Lauderdale, recently returned from a six weeks' vacation trip to Chicago via New Orleans.

* * *

Dr. A. H. Freeman of Ocala attended the Convention of Rotary International at Vienna, Austria, in June. He also did post-graduate work in ophthalmology in the Fuchs, Lindner and Meller Clinics at the University of Vienna, returning late in August.

POSITION WANTED by experienced Public Health Nurse as supervisor of nurses in a unit, county nurse, school nurse, or head nurse in hospital. Registered in Georgia and Florida, and member of the National Organization of Public Health Nurses and Graduate Nurses' Association. References supplied. Elizabeth A. Woodson, R.N. & P.H.N., Box 5, Edgefield, S. C.



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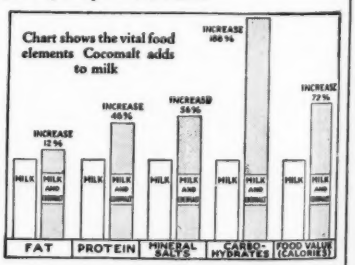

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The following message is from our new National President, Mrs. Arthur B. McGlothlan, of Saint Joseph, Missouri:

"The reports of the chairmen of the various national committees and of the state presidents indicate unmistakably to the Auxiliary women everywhere that as doctors' wives we have a definite sphere of influence as members of lay women's organizations. As such we may form a strong bond between the medical profession and the lay public.

"Because of this possibility we shall make every effort this year to strengthen our organization both in numbers and in quality of work done.

The greatest demand made upon us is for the right kind of source material for health programs, and for health program speakers.

"We are attempting to supply this information through a selected packet of literature, assembled by the Bureau of Public Information of the American Medical Association; by leaflets on communicable diseases compiled from the best recent medical literature and approved by a member of our advisory committee appointed for that purpose; by the dissemination of leaflets on 'Some Contributions of Modern Medicine to the World'; by announcement of the American Medical Association radio broadcasts; and by using our best energies to promote the circulation of Hygeia.

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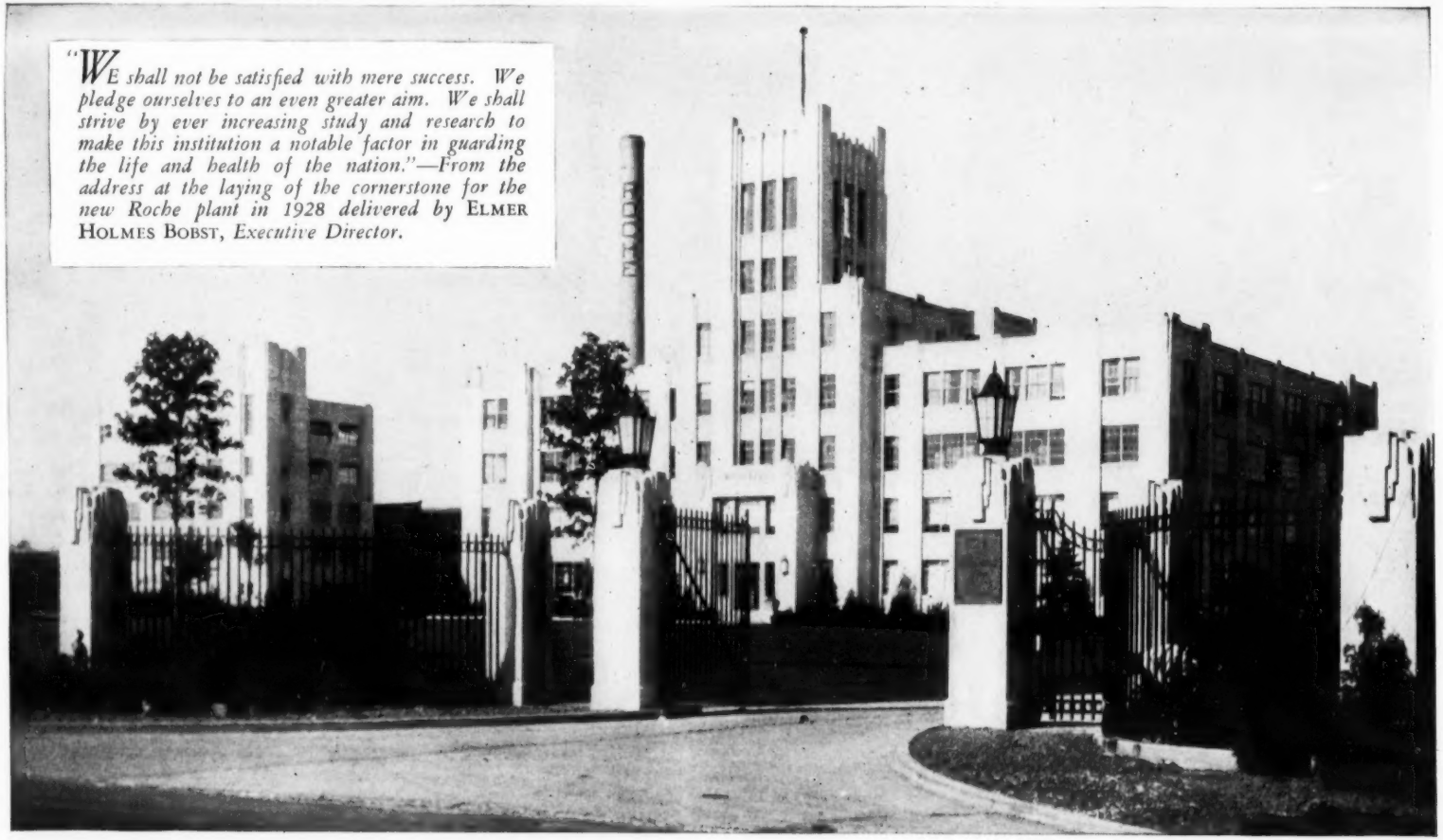

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"Many Auxiliaries are doing outstanding constructive philanthropic work such as contributing to a medical benevolence fund, assisting in hospital auxiliary work and establishing medical student loan funds.

"We believe that one of the best services we can render to the medical profession is to make our state and national conventions so attractive that great numbers of our women will be enticed to attend and will influence their husbands to come.

"The recent meeting in Philadelphia showed that a convention can serve such a purpose. To this end we are already planning to make the convention in New Orleans the best yet if possible and we herewith invite all the doctors' wives to come and bring their husbands.

"I hope your Press and Publicity Chairman will let me talk with you again. Always read her reports and those in the Bulletin of the American Medical Association. In the Bulletin are two pages edited this year, as last, by Mrs. Walter Jackson Freeman, our national president-elect. I commend those pages and these to you and ask your support to make our departments co-operative, useful and successful."

* * *

We have already published the names of the new officers elected at the National Convention in Philadelphia, but perhaps it might be of interest to the State Chairman of Standing Committees, to know the names of the new National Chairmen of their respective national committees. They are as follows: Program—Mrs. George H. Hoxie, 3719 Pennsylvania Ave., Kansas City, Missouri; Finance—Mrs. Thos. O. Freeman, 1204 Wabash Ave., Mattoon, Ill.; Legislation—Mrs. Arthur A. Herold, 1166 Louisiana Ave., Shreveport, La.; Public Relations—Mrs. A. Haines Lippincott, 406 Cooper St., Camden, N. J.; Hygeia—Mrs. Rogers N. Herbert, 1509 Stratton Ave., Nashville, Tenn.; Revisions—Mrs. Chas. W. Garrison, 317 Ridgeway St., Little Rock, Arkansas; Press and Publicity—Mrs. Milton P. Overholser, Har-

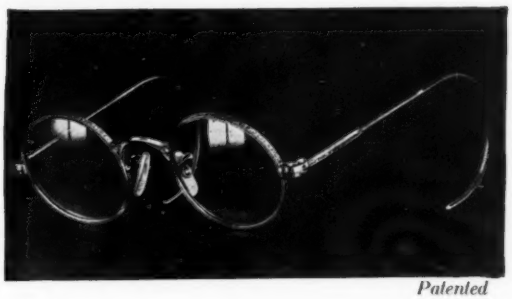
Here

is one of the advertisements of The Sugar Institute

THE advertisement reproduced here is one of the series appearing in publications throughout the country. In order to keep the statements in accord with modern medical practice, they have been submitted to and approved by some of the leading authorities in the field of human nutrition in the United States. The Sugar Institute, 129 Front Street, New York.

JUNIOR

A FRAME *for* REG'LAR YOUNGSTERS



Patented

FOR THE CHILD who "is so hard to keep in glasses", the Junior frame has been designed. Children like it because it's comfortable and good-looking. Parents like it because it will stand more than the usual amount of rough treatment. You'll like it because it answers the question—"How can I keep my child in glasses ?".

Examine a Junior frame. Note the braced construction, the rocking pads which fit so comfortably, the handsome engraving — just like on Mother's and Dad's glasses.

When you prescribe glasses for a "reg'lar" youngster, it would be a favor to suggest a Junior frame.

J245

With preparation for school the topic of the day, the right glasses for children is a timely subject.

AO

AMERICAN OPTICAL COMPANY

risonville, Missouri; Printing—Mrs. Samuel C. Red, 817 Caroline Ave., Houston, Texas; Archives—Mrs. Southgate Leigh, 526 Shirley Ave., Norfolk, Va.; Historian—Mrs. Allen H. Bunce, 368 Ponce de Leon Ave. N. E., Atlanta, Ga.; Parliamentarian—Mrs. William S. Tomlin, 1820 North Illinois Ave., Indianapolis, Ind.

* * *

Your Editor is sending out an S. O. S. call to State Chairmen of Standing Committees, to all Presidents of County Auxiliaries and to members of the Florida Auxiliary to please send in material for this page; personal news items, and any news of the activities of your organizations! Let's have some local news for next month's Journal!

ADVERTISERS' NOTES

The Surgical Supply Company has opened a new store in the city of Miami, located at 23 N. E. Second Avenue. This announcement has just been released by Henry L. Parramore, president and general manager, Jacksonville. This Company has carried a continuous advertisement in the Journal for many years.

WHEN, AS AND IF

the bottle-fed baby exhibits symptoms indicating partial vitamin B deficiency—described by Hoobler as (1) anorexia, (2) loss of weight, (3) spasticity of arms and legs, (4) restlessness, fretfulness, (5) pallor, low hemoglobin, etc.—Dextri-Maltose with Vitamin B may be used in adequate amounts (up to 71 Chick-Roscoe units) without causing digestive disturbance. This ethically advertised product derives its vitamin B complex from an extract of wheat germ rich in B and brewers' yeast rich in G. Physicians who have attempted to make vitamin B additions to the infant's formula but who have been obliged to abandon same due to diarrheas or other unfortunate nutritional upsets, will welcome Mead's Dextri-Maltose with Vitamin B. This is a tested product with rich laboratory and clinical background and is made by Mead Johnson & Company, a house specializing in infant diet materials.

Not all infants require vitamin B supplements, but when the infant needs additional vitamin B, this product supplies it together with carbohydrate. In other cases, the carbohydrate of choice is Dextri-Maltose No. 1, 2 or 3.

SUCCEEDING WALLACE-SOMERVILLE SANITARIUM, MEMPHIS, TENN.

THE WALLACE SANITARIUM

MEMPHIS, TENN.

WALTER R. WALLACE, M.D.
HUGH W. PRIDDY, M.D.

FOR THE TREATMENT OF

DRUG ADDICTIONS,

ALCOHOLISM, MENTAL AND

NERVOUS DISEASES

LOCATED IN THE EASTERN SUBURBS OF THE CITY. SIXTEEN ACRES OF BEAUTIFUL GROUNDS. ALL EQUIPMENT FOR CARE OF PATIENTS ADMITTED.

DIABETICS

have palatable

Starch-free Bread

when you prescribe

Listers

DIETETIC FLOUR

Self-rising — contains no starch, no gluten

Ask for nearest Depot or order direct

LISTER BROS. Inc. 41 East 42nd Street NEW YORK, N. Y.

Patronize Journal Advertisers

ALL PRODUCTS ADVERTISED IN THIS JOURNAL HAVE BEEN APPROVED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEY ARE RELIABLE.

THE TUCKER SANATORIUM, *Incorporated*
212 West Franklin Street (Corner of Madison) RICHMOND, VIRGINIA

Private Sanatorium for neurological cases under the charge of Drs. Beverley R. Tucker, Howard R. Masters and James Asa Shield. Departments of massage, hydrotherapy and occupational therapy.

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CAREY HAND
32-36 Pine Street,
ORLANDO, FLORIDA
Telephone 4381

MARCUS CONANT COMPANY
A. W. RUUS, President
JACKSONVILLE, FLORIDA
Telephones: 5-0010 and 5-0011

NEXT?

MOULTON & KYLE
13 West Union Street
JACKSONVILLE, FLORIDA
Telephone 5-0186

COMBS FUNERAL HOMES
Ambulance Service
Phone 32101 MIAMI, FLORIDA
Phone 52101 MIAMI BEACH, FLA.

FERGUSON UNDERTAKING CO.
1201 South Olive
WEST PALM BEACH, FLA.

A new protein milk in sterilized liquid form that is especially recommended for cases of summer diarrhea, is now available to physicians. It is probably one of the most convenient milk products ever offered to physicians as it is in concentrated liquid form and hermetically sealed in small six-ounce cans. It never gets rancid and keeps in any climate. Since it is sterile, boiling is unnecessary.

This useful new product is identified by the trade name SMACO product number 201 Liquid Protein Milk and is prepared by the Research Division of S. M. A. Corporation. Many physicians refer to this product as Casein Milk, Eiweiss Milch or Finkelstein formula.

A review of the recent literature on the action of Liver Extract No. 343 in the treatment of pernicious anemia, suggests a number of generalizations:

1. That the optimum maintenance dosage is an individual consideration which can be determined accurately only by repeated blood examinations by the physician, and that a patient whose blood count has been brought to normal may continue for a year or more on a dosage of potent substance that is less than the required maintenance dose, but that eventually the need of a higher maintenance dose will become evident.

2. That during infection and fever it must be expected that the hematopoietic response will be inhibited but that an adequate dosage of liver extract should nevertheless be continued.

3. That if single massive doses of liver extract are given the excess is not necessarily wasted, but may continue for a limited time at least to give results similar to those to be expected from a dosage of three vials daily.

4. That "the average gain in red blood-cells at the end of one month's treatment bears an inverse relation to the level of the red blood-cells before treatment was begun," and that in uncomplicated cases the number of red blood-cells produced at the end of one month by a daily dosage of three vials of Liver Extract No. 343, is essentially the same as that produced by higher dosages of four to ten vials per day.

Liver Extract No. 343 is supplied through the drug trade in boxes containing two dozen vials of powdered extract. The contents of each vial represents material derived from 100 grams, or about 3½ ounces, of fresh raw liver.

Lac-Bismo
(HART)
See Description, Journal A. M. A.
Volume XLVII, Page 1488
A scientific combination of Bismuth Subcarbonate and Hydrate suspended in water.
Each fluidrachm contains 2½ grains of the combined salts in an extremely fine state of subdivision.
Medicinal Properties: Gastric Sedative, Antiseptic, Mild Astringent and Antacid.
Indications: In Gastro-Intestinal Diseases, Diarrhoea, Dysentery, Cholera-Infantum, etc. Also suitable for external use in cases of ulcers, etc.
E. J. HART & CO., Ltd.,
Manufacturing Chemists
NEW ORLEANS

A characteristic of Mead's Powdered Lactic Acid Milk No. 1 (containing Dextri-Maltose) is the finely divided soft curd which never clogs the nipple. In a few moments, any mother can carry out the simple procedure required without error — a saving in time to her and an assurance to the physician that the feedings are correctly prepared. This product never curdles; it is always ready, and quickly reliquefied. No ice is necessary to keep the powder. It is convenient while traveling. Samples and literature on request. Mead Johnson & Company, Evansville, Indiana, U.S.A.